...Upfront

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The Dilemma of Plenty

In the last half of the 1990's, many Americans have enjoyed the benefits of a strong economy—low unemployment, low inflation, relatively low interest rates, and rising incomes. According to the *1999 Economic Report of the President*, the typical U.S. family income is up more than $3,500, adjusted for inflation, since 1993. We are spending this higher income on a variety of "luxury" goods—fancier computers, more elaborate vacations, home remodeling, and more "luxury" foods.

These "luxury" foods—foods prepared and, in some cases, served outside the home—are becoming an increasingly prominent part of Americans' diets. We now spend 47 percent of our food dollars at fast food outlets, sport events, theme parks, coffee bars, and other eating places.

Even many of our at-home food purchases are prepared outside the home. Much of the growth in food-at-home spending comes from time-pressed consumers picking up fully prepared entrees and side dishes from their local supermarkets. According to *Takeout Business*, the top 25 supermarket providers of "meal solutions" (fully or partially prepared foods) boosted their sales of these items by 36.2 percent in 1998.

This increase in the convenience and services provided by the food industry contributed to the rise in food marketing costs. In 1998, marketing costs for U.S. farm foods grew 4.8 percent, outpacing the general inflation rate of 1.6 percent. The number of foodservice workers continued to increase, while the additional labor needed to prepare "meal solutions" raised employee hours relative to output and lowered labor productivity in foodstores.

A strong U.S. economy also finds Americans spending their rising incomes on French wines, Canadian seafood, and other imported foods and beverages. Imports of processed foods grew 5.8 percent in 1998 to a record $32 billion, and surpassed U.S. exports of processed food by $2.6 billion.

At the same time that we and many other countries dine on an abundance of various foods, some countries continue to suffer from undernutrition. The United States stands in stark contrast to these nations, especially the countries of Sub-Saharan Africa, where food supplies provide less than 2,200 calories per person per day.

Is the United States' abundance too much of a good thing? In 1958, the U.S. food supply provided 3,000 calories per person per day. Today, that number is closer to 3,800. We may be more wasteful with food, but our waistlines say differently. From 1960 to 1994, the age-adjusted prevalence of obesity in adults increased from nearly 13 percent to 22.5 percent of the U.S. population, with most of the increase occurring in the 1990's. The prevalence of overweight in adults held fairly steady at 32 percent. Alarmingly, obesity rates are also rising among U.S. children. Many of our calories are being consumed via processed foods or foods prepared away from home where we surrender our control over ingredients and serving sizes. As we approach the end of the plentiful 1990's, Americans need to take more responsibility for the foods we eat—both at home and especially away from home.

Rosanna Mentzer Morrison
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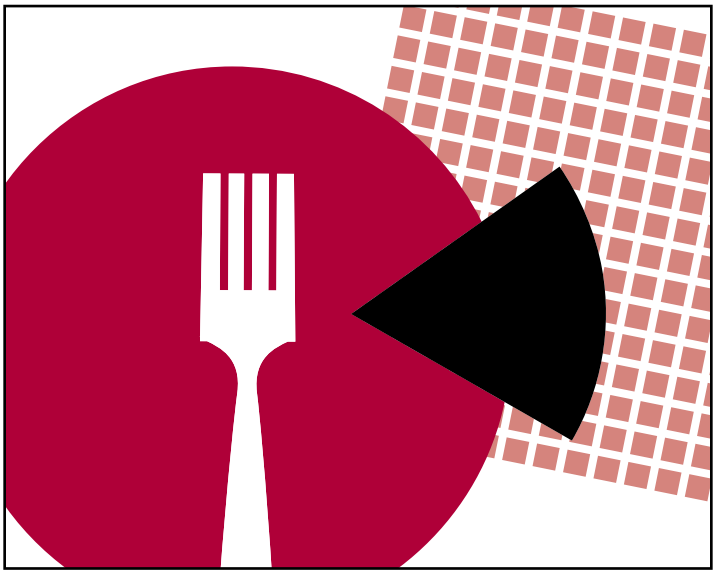
Inside...



U.S. Food Supply Providing More Food and Calories

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All three major per capita food supply measurements—food available for consumption, nutrients available for consumption, and the food supply adjusted for spoilage and other losses in the home and marketing system—suggest that Americans in the 1990's are consuming more food and several hundred more calories per person per day than did their counterparts in the late 1950's (when per capita calorie consumption was at the lowest level in this century), or even in the 1970's.

Meanwhile, as calorie-intake levels have risen, physical activity levels appear to have declined among the majority of Americans. More than 60 percent of American adults are not regularly physically active, and 25 percent of adults are not active at all, according to the U.S. Centers for Disease Control and Prevention. Increasing physical activity is a formidable public health challenge in a technologically advanced society. Few occupations today require significant physical activity, and most people use motorized transportation to get to work and to perform routine errands and tasks. Even leisure is increasingly filled with sedentary behaviors, such as watching television, "surfing" the Internet, and playing video games.

Not surprisingly, the trend in the prevalence of overweight and obesity is upward. About 97 million adults in the United States—55 percent of the population—are overweight or obese, based on data from the third National Health and Nutrition Examination Survey (NHANES III; 1988-94). These individuals face increased risk of illness from high blood pressure, high cholesterol, diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea and respiratory problems, and certain cancers. The total costs attributable to obesity-related disease approaches $100 billion annually, according to the National Institutes of Health.

Public Health Service guidelines define obesity (severe overweight) as a body mass index (BMI) of 30 and above, moderate overweight as a BMI of 25 to 29.9, normal (healthy) weight as a BMI of 18.5 to 24.9, and underweight as a BMI below 18.5 (fig. 1). A BMI of 30 is about 30 pounds overweight and equivalent to 221 pounds in a 6'0" person and to 186 pounds in one 5'6". The BMI numbers apply to both men and women. Some very muscular people may have a high BMI without health risks.

From 1960 to 1994, the age-adjusted prevalence of obesity in adults increased from nearly 13 percent to 22.5 percent of the U.S. population (40 million adults), with most of the increase in the 1990's. The prevalence of moderate overweight in adults, which has shown little or no increase over time, stands at 32 percent of the U.S. population (57 million adults). Alarmingly, an upward trend in obesity is also occurring for U.S. children.

The aggregate food supply in 1994 (the latest year for which nutrient data from USDA's Center for Nutrition Policy and Promotion are available) provided 3,800 calories per person per day, 500 calories above the 1983 level and 800 calories above the record low in 1957 and 1958 (fig. 2). Of that 3,800 calories, USDA's Economic Research Service (ERS) estimates that roughly 1,100 calories were lost to spoilage, plate waste, and cooking and other losses, putting dietary intake of calories in 1994 at just under 2,700 calories per person per day. ERS data suggest that average daily calorie intake increased 14.7 percent, or about 340 calories, between 1984 and 1994, and

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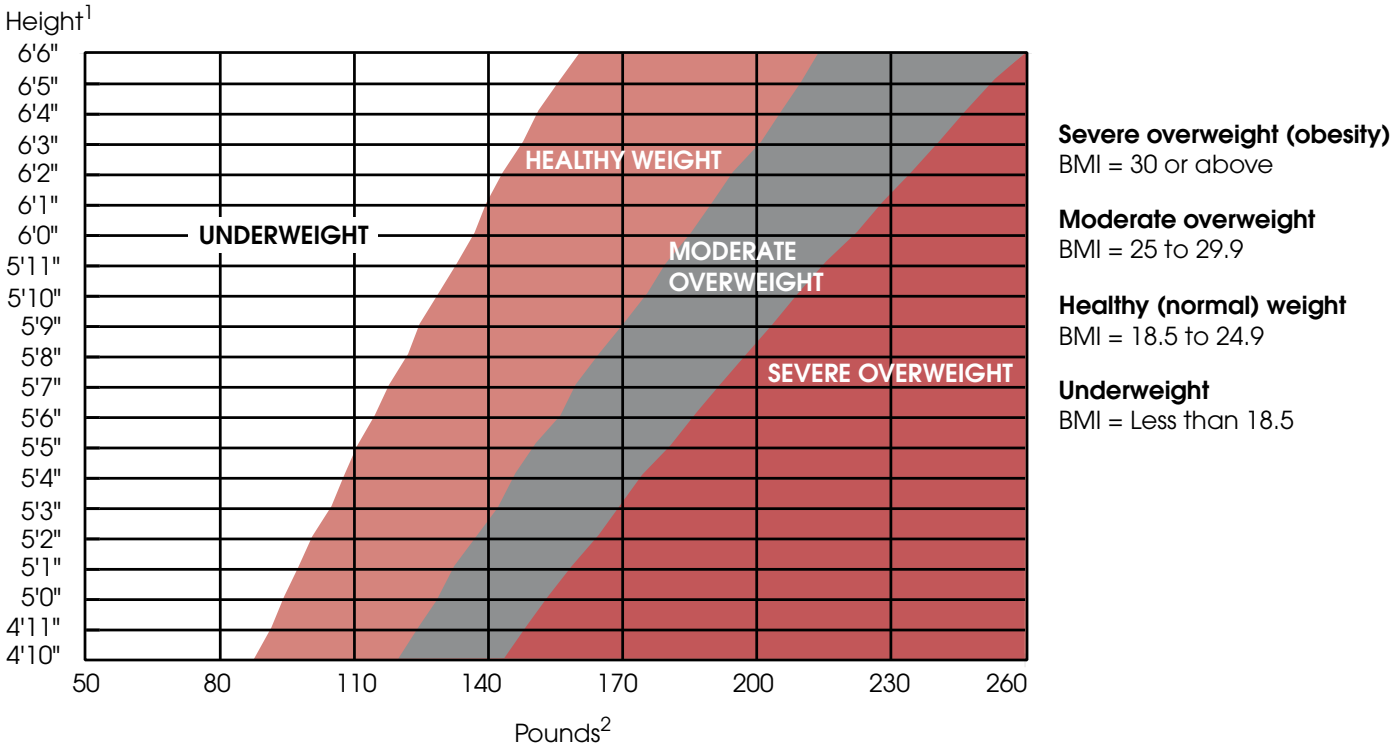
remained stable between 1994 and 1997. Of that 14.7-percent increase, grains (mainly refined grain products) contributed 6.2 percentage points; added fats and oils, 3.4 percentage points; added sugars, 3.4 percentage points; fruits and vegetables, 1.4 percentage points; and meats and dairy products together, 0.3 percentage point.

Some of the observed increase in caloric intake may be associated with the increase in eating out. Data from USDA's food intake surveys show that the food-away-from-home sector provided 34 percent of total food energy consumption in 1995, up from 19 percent in 1977-78. The data also suggest that, when eating out, people either eat more or eat higher calorie foods—or both—and that this tendency appears to be increasing.

A comparison of foodservice portion sizes in 1957 and 1997 is illuminating. The typical fast-food outlet's hamburger in 1957 contained a little more than 1 ounce of cooked meat, compared with up to 6 ounces in 1997. Soda was 8 ounces in 1957, compared with 32 ounces to 64 ounces in 1997. A theatre serving of popcorn was 3 cups in 1957, compared with 16 cups (medium size popcorn) in 1997. A muffin was less than 1 1/2 ounces in 1957, compared with 5 ounces to 8 ounces in 1997.

According to USDA's latest food intake survey, Americans eat only about six servings a day from the grain group. But the food supply data adjusted for spoilage and waste suggest that Americans eat an average 10 servings a day. Methodological differences are not sufficient to explain this discrepancy. Americans' concept of serving

Figure 1
Weight Classification Based on Body Mass Index (BMI)



Note: BMI is significantly correlated with total body fat content and thus is a reliable indicator that someone may have a weight problem. BMI uses a mathematical formula that takes into account both a person's height and weight. BMI equals a person's weight in kilograms divided by height in meters squared. A nonmetric conversion formula for calculating BMI is as follows. Divide your weight in pounds by your height in inches, divide again by your height in inches, and then multiply by 704.5.
[1]Without shoes.
[2] Without clothes. The higher weights apply to people with more muscle and bone.
Source: Data taken from USDA and Public Health Service.

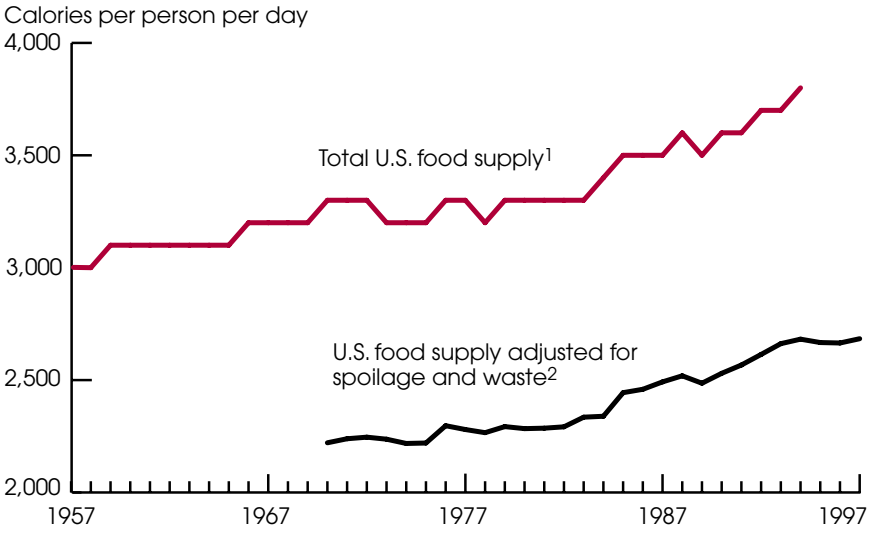
size probably far exceeds the Food Guide Pyramid's. Changes in society—more women in the labor force, more discretionary income, and smaller households—continue to exert a tremendous influence on our dietary patterns. People in the 1990's are eating out or buying prepared foods and doing much less cooking and baking in the home than did their counterparts in previous decades, and are less familiar with standard servings.

Foods of low nutrient density such as cakes, cookies, soft drinks, syrups, jams, potato and corn chips, and popcorn are major contributors to intakes of energy, fats, and carbohydrates. Continued intake of these foods compromise intake of more nutritious foods.

A variety of factors are responsible for the changes in U.S. consumption patterns in the last 50 years, including changes in relative prices, increases in real (adjusted for inflation) disposable income, and more food assistance for the poor. New products, particularly more convenient ones, also contribute to shifts in consumption, along with more imports, growth in the away-from-home food market, expanded advertising programs, and increases in nutrient-enrichment standards and food fortification.

Sociodemographic trends also driving changes in food choices include smaller households, more two-earner households, more single-parent households, an aging population, and increased ethnic diversity. An expanded scientific base relating diet and health, new *Dietary Guidelines for Americans* designed to help people make food choices that promote health and prevent disease, improved nutrition labeling, and burgeoning consumer interest in nutrition also influence marketing and consumption trends.

Figure 2
Calories from the Per Capita U.S. Food Supply, Adjusted for Spoilage and Waste, Increased 21 Percent Between 1970 and 1994
Three-quarters of that increase occurred between 1984 and 1994



[1]Rounded to the nearest hundred.
[2]Not calculated for years before 1970.
Source: USDA's Center for Nutrition Policy and Promotion; USDA's Economic Research Service.

ERS estimates per capita food and nutrient supplies, based on food disappearance data (see box). These data are used as a proxy to estimate human consumption. The data reported in tables 1 through 6 are unadjusted for spoilage and waste, so they may overstate what is actually eaten. The data are used more appropriately as indicators of trends in consumption over time.

Meat Consumption at Record High in 1999

Now more than ever, we are a Nation of meat eaters. In 1999, total meat consumption (red meat, poultry, and fish) is expected to reach 197 pounds (boneless, trimmed-weight equivalent) per person, 64 pounds above average annual consumption in the 1950's (table 1). Each American consumed an average of 12 pounds more red meat than in the 1950's, 48 pounds more poultry, and 4 pounds more fish and shellfish.

Nutritional concern about fat and cholesterol has encouraged the production of leaner animals (beginning in the late 1950's), the closer trimming of outside fat on retail cuts of meat (beginning in 1986), the marketing of a host of lower fat ground and processed meat products, and consumer substitution of poultry for red meats since the late 1970's—significantly lowering the meat, poultry, and fish group's contribution to total fat and saturated fat in the food supply. Despite near record-high per capita consumption of total meat in 1994, the proportion of fat in the U.S. food supply from meat, poultry, and fish declined from 32 percent in the 1950's to 25 percent in 1994. Similarly, the proportion of saturated fat contributed by meat, poultry, and fish fell from 33 percent in the 1950's to 26 percent in 1994.

Even leaner meat group choices may help people meet fat recommendations. After adjusting for

waste and cooking losses, the 1998 per capita meat supply provided the equivalent of 6.0 ounces of cooked meat (lean and fat portion) per day. The Food Guide Pyramid recommends 6 ounces of cooked lean meat equivalents per day for a 2,200-calorie diet. Red meats accounted for 71 percent of the total fat and 77 percent of the saturated fat in the 1994 meat supply. Red meat's fat content is widely variable; only the leanest cuts are as low in fat as broiled fish or skinless chicken breast. Red meat accounted for 49 percent of total meat-equivalent servings in 1998.

Rising consumer incomes, especially with the increase in two-income households, and meat prices in the 1990's that were often at 50-year lows, when adjusted for inflation, explain much of the increase in meat consumption. In addition, the meat industry has provided scores of new brand-name, value-added products processed for consumers' convenience, as well as a host of products for foodservice operators.

Between 1950 and 1989, annual consumption of eggs steadily declined nearly 4 eggs per person per year, from 390 eggs to 237. This long-term decline in per capita egg consumption leveled off in the early 1990's. From a record low of 234 eggs per person per year in 1990-91, egg consumption rose to 244 eggs in 1998, and is projected to rise to 249 eggs in 1999. The record high for U.S. per capita consumption was 403 eggs in 1945. Much of the decline in egg consumption since 1950 was due to changing lifestyles (for example, less time for breakfast preparation in the morning as large numbers of women joined the paid labor force) and the perceived ill effects of cholesterol intake associated with egg consumption.

How Food Consumption Is Measured

The annual food supply series comprises three data sets—the primary data on food supply and utilization, estimates of the nutrient content of the food supply, and food supply data adjusted for spoilage and waste.

Primary Food Supply and Utilization Estimates. Food supply and utilization data, compiled and published annually by USDA's Economic Research Service (ERS), measure the flow of raw and semiprocessed food commodities through the U.S. marketing system and are a key component of the National Nutrition Monitoring and Related Research Program. The series provides continuous data back to 1909 and is typically used to measure changes in food consumption over time and to determine the approximate nutrient content of the food supply.

Food supply data, also known as food disappearance data, reflect the amount of the major food commodities entering the market, regardless of their final use. The total amount available for domestic consumption is estimated by food disappearance data as the residual after exports, industrial uses, seed and feed use, and year-end inventories are subtracted from the sum of production, beginning inventories, and imports. The use of conversion factors allows for some subsequent processing, trimming, spoilage, and shrinkage in the distribution system. However, the estimates also include residual uses for which data are not available (such as miscellaneous non-food uses, and changes in retail and consumer stocks). Because the food disappearance data come from market channels, the data are available only on a per capita basis and cannot be used to estimate consumption by age, sex, or demographic group. Consumption estimates derived from food disappearance data tend to overstate actual consumption because they include spoilage and waste accumulated through the marketing system and in the home. Food disappearance data are used more appropriately as indicators of trends in consumption over time.

Nutrients Available for Consumption. USDA's Center for Nutrition Policy and Promotion estimates the amounts per capita, per day of food energy (calories) and of 24 nutrients and food components in the U.S. food supply. Food supply nutrient estimates are derived from ERS data on the amount of food available for consumption and data on the nutrient composition of foods from USDA's Agricultural Research Service's National Nutrient Data Bank System. Nutrient values exclude nutrients from the inedible parts of foods, such as bones, rinds, and seeds, but include nutrients from parts of food that are edible but not always eaten, such as the separable fat on retail cuts of meat.

Food Supply Data Adjusted for Spoilage and Waste. ERS has developed new methods to adjust the food supply data for spoilage, plate waste, and cooking and other losses in the home and marketing system and to convert the data into Food Guide Pyramid servings. This allows researchers to gain a more complete understanding of U.S. dietary patterns by comparing food supply servings measured at the national level with the estimates generated at the individual level by USDA's food intake surveys. (Because caloric intake is subject to underreporting, caloric and nutrient estimates from dietary recall surveys represent a lower limit of actual intake.)

Table 1
In the 1990's, Americans Consumed an Average 57 Pounds More Meat Per Year Than in the 1950's, and a Third Fewer Eggs

Item	Annual averages 1950-59	1960-69	1970-79	1980-89	1990-99	1998	1999
	Pounds per capita, boneless-trimmed weight						
Total meats	133.0	161.8	177.1	182.9	190.7	195.3	197.2
Red meats	102.3	123.4	129.4	121.9	113.3	115.6	113.9
Beef	52.8	69.1	80.9	71.8	63.7	64.9	63.5
Pork	41.0	47.9	45.0	47.7	48.0	49.1	49.1
Veal and lamb	8.5	6.4	3.5	2.4	1.6	1.6	1.3
Poultry	19.8	27.7	35.2	46.8	62.6	65.0	68.4
Chicken	16.2	22.5	28.4	36.9	48.5	50.8	54.4
Turkey	3.5	5.1	6.8	9.9	14.1	14.2	14.1
Fish and shellfish	10.9	10.7	12.5	14.2	14.8	14.8	14.8
	Number per capita						
Eggs	373	320	285	257	238	244	249

Note: Totals may not add due to rounding; 1999 projection as of July 1999.
Source: USDA's Economic Research Service.

Eating Out Cuts Milk, Boosts Cheese Consumption...

In 1998, Americans drank an average of 35 percent less milk and ate nearly 3 $^{2}/_{3}$ times as much cheese (excluding cottage, pot, and baker's cheese) as in the 1950's (table 2).

Consumption of beverage milk declined from an annual average of 36 gallons per person in the 1950's to 24 gallons in 1998. Consumption of soft drinks, fruit drinks and ades, and flavored teas may be displacing beverage milk in the diet. Big increases in eating away from home, especially at fast-food places, and in consumption of salty snack foods favored soft drink consumption.

The beverage milk trend is toward lower fat milk. While whole milk represented 92 percent of all beverage milk (plain, flavored, and buttermilk) in the 1950's, its share dropped to 35 percent in 1998.

Average annual consumption of cheese (excluding full-skim American and cottage, pot, and baker's cheeses) increased 269 percent between the 1950's and 1998, from 7.7 pounds per person to 28.4 pounds. Lifestyles that emphasize convenience foods were probably major forces behind the higher consumption. In fact, two-thirds of our cheese now comes in commercially manufactured and prepared foods (including foodservice), such as pizza, tacos, nachos, salad bars, fast-food sandwiches, bagel spreads, sauces for baked potatoes and other vegetables, and packaged snack foods. Advertising and new products—such as reduced-fat cheeses and resealable bags of shredded cheeses, including cheese blends tailored for use in Italian and Mexican recipes—also boosted consumption.

...and Swells Use of Baking and Frying Fats

Americans' mid-1990's push to cut dietary fat is apparent in the recent per capita food supply data, which show a modest decline in the use of added fats and oils since 1993. Annual per capita consumption of added fats and oils declined about 7 percent between 1993 and 1997, from a record-high 70.2 pounds (fat-content basis) per person to 65.6 pounds. (The decline in calories from added fats since 1993 has been more than offset by a rise in calories from grain products and added sugars.) However, average use of added fats and oils in 1997 remained 47 percent above the 1950's (table 3). Added fats and oils include those used directly by consumers, such as butter on bread, as well as shortenings and oils used in commercially prepared cookies, pastries, and fried foods. All fat naturally present in foods, such as in milk and meat, are excluded.

Americans in 1997 consumed, on average, three times more salad and cooking oils than they did in the 1950's, and nearly twice as much shortening. Average use of table spreads declined by 25 percent during the same period.

Table 2
Americans Are Drinking Less Milk, Eating More Cheese and Frozen Dairy Products

Item	Unit	Per capita annual averages 1950-59	1960-69	1970-79	1980-89	1990-98	1998
All dairy products[1]	lb	700.0	619.0	548.0	575.0	577.0	591.0
Cheese[2]	lb	7.7	9.5	14.4	21.5	26.7	28.4
Cottage cheese	lb	3.9	4.7	4.9	4.1	2.9	2.7
Frozen dairy products	lb	22.8	27.4	27.8	27.4	29.1	29.1
Ice cream	lb	18.0	18.3	17.7	17.7	16.1	16.1
Lowfat ice cream	lb	2.7	6.3	7.6	7.3	7.5	7.5
Sherbet	lb	1.3	1.5	1.5	1.3	1.3	1.3
Other	lb	1.0	1.5	1.0	1.2	4.3	4.3
Nonfat dry milk	lb	4.9	5.9	4.1	2.4	3.1	3.4
Dry whey	lb	.2	.6	2.1	3.3	3.6	3.4
Condensed and evaporated milks	lb	21.4	15.7	9.4	7.5	7.6	6.6
Cream products	½ pt	18.0	13.3	10.1	12.8	15.6	17.3
Yogurt	½ pt	.1	.7	3.2	6.5	8.5	9.3
Beverage milk	gal	36.2	32.5	29.8	26.5	24.7	23.7
Whole	gal	33.3	28.8	21.7	14.3	9.2	8.3
Lower fat	gal	2.9	3.7	8.1	12.2	15.5	15.4

Note: Totals may not add due to rounding.
[1]Milk-equivalent, milkfat basis; includes butter. Individual items are on a product-weight basis.
[2]Natural equivalent of cheese and cheese products; excludes full-skim American, cottage, pot, and baker's cheese.
Source: USDA's Economic Research Service.

In the 1950's, the fats and oils group (composed of added fats and oils) contributed the most fat to the food supply (41 percent), followed by the meat, poultry, and fish group (32 percent). By 1994, the fats and oils group's contribution to total fat had jumped 11 percentage points to 52 percent, probably due to the much higher consumption of fried foods in foodservice outlets, the huge increase in consumption of high-fat snack foods, and the increased use of salad dressings. Magarine, salad dressings and mayonnaise, cakes and other sweet baked goods, and oils continue to appear in the top 10 foods for fat contribution, according to recent USDA food intake surveys, which indicates the ongoing prevalence of discretionary fats in Americans' diets.

In the last two decades, Americans have been more successful in reducing the fat density in home foods than in away-from-home foods, according to food intake surveys. In 1977-78, both home and away-from-home foods provided slightly more than 41 percent of their calories from fat. By 1987-88, the fat density of home foods had declined to 36.4 percent of total calories from fat, compared with 38.7 for away-from-home foods. Since then, the fat density of home foods declined steadily to 31.5 percent of calories from fat, but fat from away-from-home foods declined only slightly to 37.6 percent of calories.

Consumers may believe it less important to consider the fat content of food away from home or be less willing to sacrifice the taste when eating out—perhaps because they consider eating out to be an occasional treat that does not have the same effect on overall diet as food at home. Consumers may not realize how much more frequently they eat out or buy prepared foods than they did decades ago. Another factor may be related to differences in information, in that the fat content of away-from-home foods may be less readily apparent to consumers as that for food at home, especially for foods consumers

may not be used to preparing themselves.

Fruit and Vegetable Consumption Continues To Rise

Americans in 1997 consumed more than a fifth (22 percent) more fruit and vegetables than did their counterparts in the 1970's (table 4). (Because of changes in data availability and methodology, ERS' fruit and vegetable consumption series for the 1950's and 1960's is not comparable to that for the 1970's onward.) Restaurant salad bars became popular in the late 1970's. Most supermarket chain stores added salad bars in 1982-84. Fresh-cut fruits and vegetables, prepackaged salads, locally grown items, and exotic produce—as well as hundreds of new varieties and processed products—have been introduced or expanded since the early 1980's. Supermarket produce departments carry over 400 produce items today, up from 250 in the late 1980's and 150 in the mid-1970's. Also, the number of ethnic, gourmet, and natural foodstores, which highlight fresh produce, continues to rise. Because many exotic and specialty fruits and vegetables introduced to mainstream markets in the last decade are not yet included in ERS' database, the actual increase in fruit and vegetable consumption is probably higher than the data indicate. For example, imports of chayote, jicamas, dasheens, and cassava, if included, would add nearly a pound to per capita vegetable consumption in 1998.

Total fruit consumption in 1997 was 19 percent above average annual fruit consumption in the 1970's. Fresh fruit consumption (up 34 percent during the same period) outpaced processed fruit consumption (up 10 percent). Noncitrus fruits accounted for all of the growth in fresh fruit consumption.

Total vegetable consumption in 1997 was 23 percent above average annual vegetable consumption in the 1970's. As in the case of fruit, fresh vegetable use (up 26 percent during the same period) outpaced processed vegetable use (up 21 percent). The introduction of pre-cut and packaged value-added products and increasing health consciousness among consumers boosted average fresh broccoli consumption by a third between 1995 and 1998 and average fresh carrot consumption by more than a fifth. Highly publicized medical research linking compounds in broccoli with strong anti-cancer activity in the body has added a powerful incentive to consumption.

The popularity of pizza and other ethnic foods in the 1990's boosted average consumption of canned tomato products, but consumption of other canned vegetables declined 13 percent between the 1970's and 1997. The popularity of french fries, eaten mainly in fast-food eateries, spawned a 63-percent increase in average consumption of frozen potatoes during the same period; consumption of other frozen vegetables rose 41 percent.

Table 3
Rising Salad/Cooking Oils and Shortening Use Boosted Consumption of Added Fats by 47 Percent Between 1950-59 and 1997

Item	Annual averages					
	1950-59	1960-69	1970-79	1980-89	1990-97	1997
	Pounds per capita[1]					
Total added fats and oils	44.6	47.9	53.6	61.1	66.6	65.6
Salad and cooking oils[2]	9.8	13.9	20.2	25.0	28.0	29.8
Baking and frying fats	21.3	20.8	20.7	23.8	26.9	25.6
Shortening	10.9	14.6	17.4	20.5	22.7	20.9
Lard and beef tallow[3]	10.4	6.2	3.3	3.4	4.1	4.7
Table spreads	17.0	16.5	15.9	15.3	14.5	12.8
Butter	9.0	6.6	4.7	4.6	4.5	4.2
Margarine	8.0	9.9	11.2	10.7	10.1	8.6

Note: Totals may not add due to rounding.
[1]Total added fats and oils is on a fat-content basis. Individual items are on a product-weight basis.
[2]Includes a small amount of specialty fats used mainly in confectionery products and nondairy creamers.
[3]Direct use; excludes use in margarine or shortening.
Source: USDA's Economic Research Service.

Consumers Eat Enough Grain Foods but Not Whole Grains

Per capita use of flour and cereal products reached 200 pounds in 1997 from an annual average of 155 pounds in the 1950's and 138 pounds in the 1970's, when grain consumption was at a record low (table 5). The expansion in supplies reflects ample grain stocks; strong consumer demand for variety breads, other instore bakery items, and grain-based snack foods; and increasing fast-food sales of products made with buns, doughs, and tortillas.

Many consumers' diets now meet the Food Guide Pyramid serving recommendation for grain products. The Pyramid recommends 9 daily servings of grain

Table 4
Per Capita Consumption of Fruit and Vegetables Increased 22 Percent Between 1970-79 and 1997

Item	Annual averages 1970-79	1980-89	1990-97	1997
	Pounds per capita, fresh-weight equivalent			
Total fruit and vegetables	584.5	622.9	682.4	710.8
Total fruit	246.7	271.2	281.0	294.7
Fresh fruit	99.5	113.2	123.9	133.2
Citrus	27.2	24.2	24.0	26.8
Noncitrus	72.3	89.0	99.9	106.4
Processed fruit	147.2	158.1	157.1	161.5
Frozen fruit, noncitrus	3.3	3.3	3.7	3.5
Dried fruit, noncitrus	9.8	12.0	12.0	10.8
Canned fruit, noncitrus	24.5	21.2	20.3	20.5
Fruit juices	109.0	121.2	120.8	126.1
Total vegetables	337.8	351.7	401.5	416.0
Fresh vegetables	146.9	155.8	174.7	185.6
Potatoes	52.5	48.5	49.1	47.9
Other	94.4	107.3	125.6	137.7
Processing vegetables	190.8	195.9	226.8	230.4
Vegetables for canning	101.0	99.0	110.0	105.9
Tomatoes	62.9	63.5	74.9	72.7
Other	38.2	35.4	35.1	33.2
Vegetables for freezing	52.1	61.1	76.3	81.5
Potatoes	36.1	42.8	54.3	59.0
Other	16.0	18.2	22.0	22.5
Dehydrated vegetables and chips	30.8	29.5	32.5	34.5
Pulses	7.0	6.6	8.0	8.5

Source: USDA's Economic Research Service.

Table 5
Consumption of Grain Products Has Been Rising in the Last 2 Decades

Item	Annual averages 1950-59	1960-69	1970-79	1980-89	1990-97	1997
	Pounds per capita					
Total grain products[1]	155.4	144.8	138.2	157.5	191.0	200.1
Wheat flour	125.7	114.0	113.6	122.8	142.5	149.7
Corn products	15.4	15.0	11.0	17.3	22.4	23.1
Rice	5.4	7.2	7.3	11.5	18.2	19.5

[1]Includes oat products, barley products, and rye flour not shown separately.
Source: USDA's Economic Research Service.

products for a 2,200-calorie diet. The food supply, adjusted for waste in the home and throughout the marketing system, provided an average of 10 daily servings of grain in 1997.

However, most people's diets fall well short of the recommended several daily servings of whole grain products. In 1992, the latest year for which data are available, whole-wheat flour accounted for less than 2 percent of total wheat flour—or one-tenth of a slice of bread per person per day. The mean daily intake of foods made from whole grains was one serving in USDA's 1996 *Continuing Survey of Food Intakes by Individuals*. According to the survey, only 7 percent of Americans ate the recommended three or more servings of whole-grain foods a day.

Since July 1999, companies that produce grain products rich in whole grains and low in fat can advertise that their products may reduce the risk of heart disease and certain cancers. This health claim, approved by the U.S. Food and Drug Administration (FDA), is restricted to foods that contain at least 51 percent whole grains by weight and list a whole grain as the first ingredient. Each serving of the food must provide a minimum of 16 grams of whole grain and have less than 3 grams of fat.

Beginning January 1, 1998, FDA has required that all enriched grain foods—including ready-to-eat breakfast cereals, pasta, bread, rolls, flour, cakes, and cookies—be fortified with folic acid (the synthetic form of folate, a B-vitamin). Folic acid fortification of grain foods should reduce the risk of neural tube birth defects like spina bifida, and may protect adults from heart disease and reduce the chances of cervical cancer in women. Folate is found naturally in legumes; liver; many vegetables, especially green leafy ones like spinach; citrus fruits and juices; whole-grain products; and eggs.

Credit: USDA

A study conducted by Tufts University researchers and published in the May 13, 1999, issue of the New England Journal of Medicine showed that since FDA's folic acid fortification regulation, the levels of folic acid in the bloodstream of study participants have nearly doubled. In addition, the number of people with insufficient folic acid levels declined from 22 percent to less than 2 percent.

Consumption of Caloric Sweeteners Hits Record High

Americans have become conspicuous consumers of sugar and sweet-tasting foods and beverages. Per capita consumption of caloric sweeteners (dry-weight basis)—mainly sucrose (table sugar made from cane and beets) and corn sweeteners (notably high-fructose corn syrup, or HFCS)—increased 45 pounds, or 41 percent, between 1950-59 and 1997 (table 6). In 1997, each American consumed a record average 154 pounds of caloric sweeteners. That amounted to more than two-fifths of a pound—or 53 teaspoonfuls—of added sugars per person per day in 1997. Of that 53 teaspoons, ERS estimates that Americans wasted or otherwise lost 20 teaspoons, putting added sugars intake at about 33 teaspoons per person per day. USDA's Food Guide Pyramid recommends that people consuming 1,600 calories a day limit their intake of added sugars to 6 teaspoons per day. The daily suggested limit increases to 12 teaspoons for those consuming 2,200 calories, and to 18 teaspoons for those consuming 2,800 calories.

A coalition of leading health experts and organizations concerned about the climbing rates of obesity and the rising level of sugar consumption in the United States asked the FDA on August 3, 1999, to require that food labels provide more information about added sugars. Food labels already list total sugars, but they do not tell the consumer which sugar is naturally occurring and which is from an

added ingredient like honey, corn syrup, fructose, white sugar, brown sugar, fruit juice concentrate, and molasses. Likewise, food labels do not provide a standard by which consumers can benchmark the amount of sugars depending on one's calorie needs.

The petition asks FDA to require two additions to the food label's Nutrition Facts panel: a breakdown of added and naturally occurring sugars in grams (4 grams is equivalent to 1 teaspoon) and inclusion of added sugars among the food components—total fat, saturated fat, cholesterol, sodium, total carbohydrate, and fiber—for which daily values are presented. Further, the petition asks the FDA to adopt USDA's Food Guide Pyramid suggestions as a recommended daily intake limit for added sugars. USDA recommends that the average person on a 2,000-calorie daily diet include no more than 40 grams of added sugars. That's about 10 teaspoons, or the amount of sugar in a 12-ounce soft drink.

Nutritionists agree that the body cannot tell the difference between naturally occurring and added sugars because they are identical chemically. However, they caution about eating sugars in large amounts and about frequent snacks of foods and beverages containing sugars that supply unnecessary calories and few nutrients.

Sugar—including sucrose, corn sweeteners, honey, maple syrup, and molasses—is ubiquitous and often hidden. In a sense, sugar is the number one food additive. It turns up in some unlikely places, such as pizza, bread, hot dogs, boxed mixed rice, soup, crackers, spaghetti sauce, lunch meat, canned vegetables, fruit drinks, flavored yogurt, ketchup, salad dressing, mayonnaise, and some peanut butter. Carbonated sodas provided more than a fifth (22 percent) of the refined and added sugars in the 1994 American food supply.

In the 1950's, much of the sugar produced went directly into the home, which meant control was in the hands of the person who bought it. In contrast, more than three-quarters of the refined and processed sugars produced today goes to food and beverage industries, and less than a quarter is being brought home as consumers do much less baking and cooking than did their counterparts decades ago.

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Table 6
America's Sweet Tooth Increased 41 Percent Between 1950-59 and 1997 As Use of Corn Sweeteners Octupled

Item	Annual averages 1950-59	1960-69	1970-79	1980-89	1990-97	1997
	Pounds per capita, dry weight					
Total caloric sweeteners	109.6	114.4	123.7	126.5	145.3	154.1
Cane and beet sugar	96.7	98.0	96.0	68.4	65.1	66.5
Corn sweeteners	11.0	14.9	26.3	56.8	78.9	86.2
High fructose corn syrup	0	0	5.5	37.3	55.5	62.4
Glucose	7.4	10.9	16.6	16.0	19.4	19.9
Dextrose	3.5	4.1	4.3	3.5	3.9	3.8
Other caloric sweeteners[1]	2.0	1.5	1.3	1.3	1.4	1.4

Note: Totals may not add due to rounding.
[1]Edible syrups (sugarcane, sorgo, maple, and refiner's), edible molasses, and honey.
Source: USDA's Economic Research Service.

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Most–But Not All–Regions See Food Gains

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Increasing incomes in many countries boosted world average calorie consumption to record levels in 1995-97. Yet not all countries saw significant gains in food consumption, reflecting continued disparity in purchasing power between the poorest countries and most other countries.

Average daily consumption reached 2,754 calories per person in 1995-97, marking a 0.6 percent per year increase from the 1970-72 level of 2,413 calories (table 1). Growth in world calorie consumption between 1986-88 and 1995-97 was somewhat slower relative to the longer term trend, averaging 0.5 percent per year. Calorie consumption does not record actual intake of food, but, rather, is a measure of the calories and food quantities available for human consumption (see box, "Food Balance Sheet Data").

Along with the growth came some notable changes in the composition of the world's diet, which mainly were a reflection of rising incomes worldwide. The share of calories from starchy roots and pulses fell 30 percent and the share from animal fats dropped 24 percent from 1970-72 to 1995-97. Conversely, the share of calories from vegetable oils jumped 46 percent and the share from meats climbed 33 percent.

However, not all countries shared in this prosperity. In Sub-Saharan Africa, for example, per capita calorie consumption has increased only in the mid-1990's after virtually stagnating since 1970. Despite the recent growth,

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Food Balance Sheet Data

Food consumption trends for 1970-97 are based on the United Nations Food and Agriculture Organization (FAO) Agrostat database, which includes annual food production, trade, and consumption estimates for most countries and world regions. Per capita food consumption is estimated at the national level using a type of food balance sheet because conducting individual or household-level food consumption surveys would be too costly for many countries.

Food balance sheets provide information about a country's average per capita daily food supply, based on commodity flows from production to end uses. The total supply of each commodity consists of domestic production, imports, and drawdowns from existing stocks. The food balance sheet is not a measure of actual food consumption because it does not account for losses due to food preparation or waste. The food supply is estimated from the amount left over after subtracting other uses from available supplies, such as exports, seed use, livestock feed, food and nonfood manufacturing, farm waste, and marketing waste due to transport and retail losses. Per capita food consumption is then estimated by dividing the total food supply by the resident population of a given country.

Food balance sheets are most useful as a tool for measuring long-term trends in national food availability and food composition, and for comparing food use with nutritional requirements. They are also useful for determining the extent to which countries rely on food imports to meet their nutritional needs. However, the national averages presented in the food balance sheet may mask important deviations from trends in energy and nutrient intake among individuals, households, and population groups within a particular country.

per capita consumption averaged only 2,176 calories per day in the region in 1995-97, 20 percent below the world average.

Regional Gains Vary

As economies grew and changed, food consumption in different regions changed accordingly (see box, "World Regions"). U.S. consumption accelerated between 1970 and 1997, with yearly growth exceeding 1 percent between 1986-88 and 1995-97. The quantity of calories available for consumption in the United States is by far the highest in the world, averaging 3,654 in 1995-97, surpassing the world average by more than 30 percent. Along with the United States, relative prosperity in the rest of the industrialized countries allowed calorie consumption to grow modestly during the last two and a half decades (0.4 percent per year), averaging 3,364 in 1995-97. In the European Union, consumption held steady during the last decade, averaging just under 3,400 calories per day in 1995-97.

Per capita calorie consumption increased twice as fast in developing countries than in industrialized countries, despite higher population growth in developing countries. In part, this increase was due to the fact that the developing countries started from very low consumption levels. Some developing countries' adoption of high-yielding crop varieties and/or increased use of irrigated land spurred production, which in turn boosted food supplies. For example, Indonesia's more than 50-percent increase in calorie consumption was certainly supported by a doubling of grain yields from 1970 to 1998.

The North African countries—Algeria, Egypt, Libya, Morocco, and Tunisia—led the way with the most significant increase in calorie consumption between 1970 and 1997, 1.4 percent annually. Most of this growth took place in the 1970's and early 1980's as increased oil revenues raised incomes and boosted consumption in Algeria, Egypt, and Libya. Growth in calorie consumption for the North African countries dropped to less than 0.7 percent per year between 1986-88 and 1995-97.

In Asia's developing countries, calorie consumption jumped more than 1 percent per year between 1970 and 1997 due to strong gains in agricultural output. Unlike in North Africa, growth in calorie consumption in developing countries in Asia has not slowed at all in recent years and remains, along with the United States, steady at the highest rate in the world. Average calorie consumption in the developing countries of Asia stood at 2,648 calories per person in 1995-97.

Eastern Europe is the only region included in this study where calorie consumption declined during the last two and half decades. Per capita calorie consumption fell from 3,416 calories per day in 1986-88 to 3,119 calories in 1995-97. Declines in calorie consumption, which began in the mid-1980's, can be attributed to stagnating and/or declining incomes triggered by the transition from centrally planned economies to free markets.

World Regions

Countries are grouped according to economic and geographic regions defined by the United Nations Food and Agriculture Organization.

Developed Countries

Industrialized countries—United States, Canada, Japan, the European Union (Austria, Belgium-Luxembourg, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and United Kingdom), Australia, Iceland, Israel, Malta, New Zealand, Norway, and South Africa.

Eastern Europe—Albania, Bulgaria, Bosnia-Herzegovina, Hungary, Croatia, Macedonia, Czech Republic, Poland, Romania, Yugoslavia, Slovenia, and Slovakia.

Developing Countries

North Africa—Algeria, Egypt, Libya, Morocco, and Tunisia.

Sub-Saharan Africa—Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central Africa Republic, Chad, Comoros, Republic of Congo, Democratic Republic of Congo, Cote d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, the Sudan, Swaziland, Tanzania, Togo, Uganda, Yemen, Zambia, and Zimbabwe.

Asia—Afghanistan, Bangladesh, Brunei, Myanmar, Sri Lanka, Cyprus, China, India, Indonesia, Iran, Iraq, Jordan, Cambodia, North Korea, South Korea, Kuwait, Laos, Lebanon, Macau, Malaysia, Maldives, Mongolia, Nepal, Pakistan, the Philippines, Saudi Arabia, Syria, Thailand, Turkey, United Arab Emirates, Vietnam, and Yemen.

Latin America—The Caribbean (including Cuba), Argentina, Bolivia, Brazil, Belize, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela.

Other developing countries—Solomon Islands, Fiji Islands, French Polynesia, Kiribati, New Caledonia, Vanuatu, and Papua New Guinea.

While Cereals Remained a Staple, Starchy Roots and Pulses Dropped

Cereals comprise roughly half of the world's diet (in terms of share of calories), virtually unchanged during the last two and half decades. Some noteworthy changes in other components of the world's diet, however, reflect rising world incomes and, in some cases, heightened awareness of healthier eating habits. The share of starchy roots and pulses in the total diet declined significantly, from more than 10 percent in 1970-72 to just over 7 percent in 1995-97, reflecting higher incomes (table 1, fig. 1). Starchy roots and pulses, such as potatoes and beans, are generally considered inferior foods, and therefore demand is expected to fall as incomes rise.

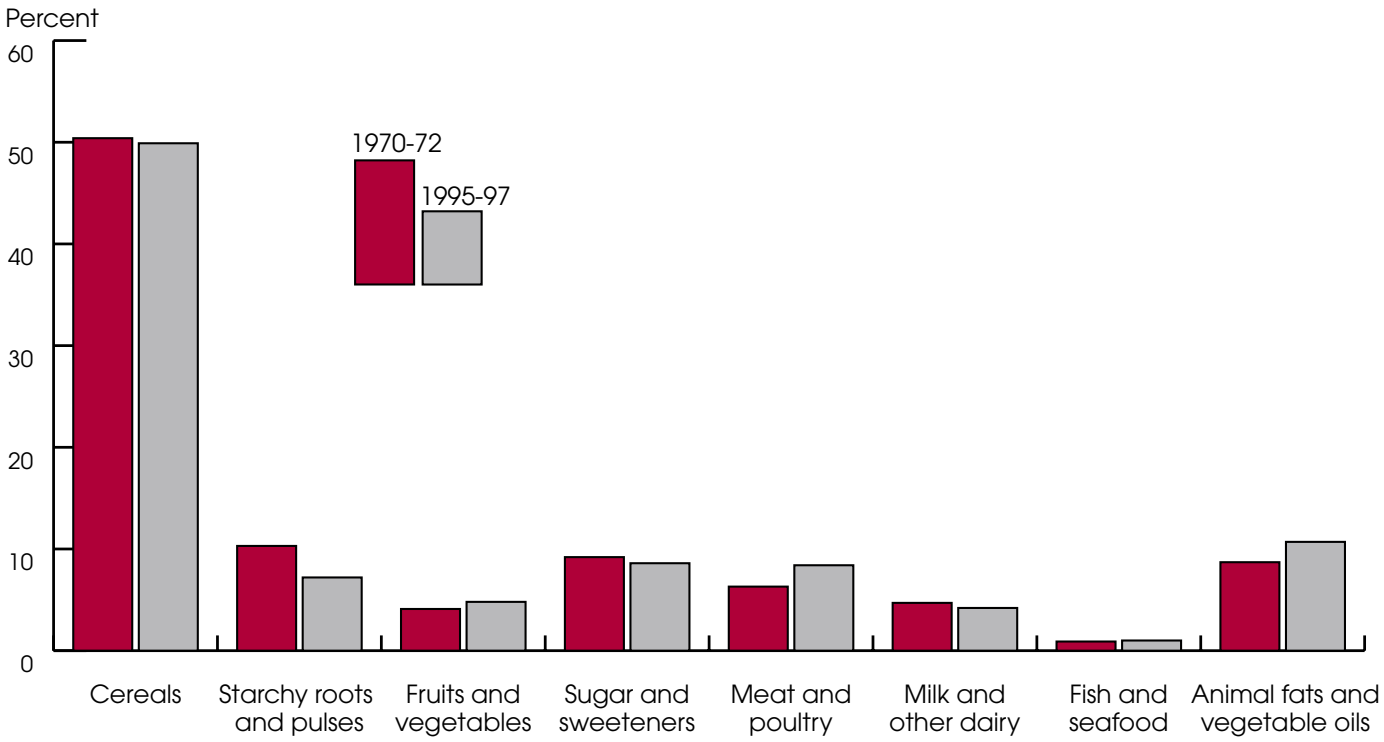
Declines in the world average share of calories were smaller in the sugars and sweeteners category as well as animal fats (butter, lard, fish oils, and edible tallow). Conversely, the meat and poultry, vegetable oils, and fruit and vegetable components of the diet increased significantly.

Table 1
Developing Countries' Diets More Varied; Calories From Cereals Lower, Higher From Meat and Vegetable Oils

Region	Total foods	Cereals	Starchy roots and pulses	Fruits and vegetables	Sugar and sweeteners	Meat and poultry	Milk and other dairy	Fish and seafood	Vegetable oils	Animal fats
	Average calories per person	*Percent of total calories*								
World:										
1970-72	2,413	50.4	10.3	4.1	9.2	6.3	4.7	0.9	5.8	2.9
1995-97	2,754	49.9	7.2	4.8	8.6	8.4	4.2	1.0	8.5	2.2
Industrial:										
1970-72	3,049	27.8	5.1	5.3	14.3	12.0	8.8	1.5	10.2	6.1
1995-97	3,364	27.2	4.4	5.5	13.4	14.0	8.8	1.7	13.5	4.6
U.S.:										
1970-72	3,008	19.5	4.1	4.8	19.2	15.2	11.2	.7	13.0	4.9
1995-97	3,654	23.4	3.9	5.4	18.0	16.4	10.3	.8	15.0	3.2
EU:										
1970-72	3,187	26.4	6.3	5.7	11.9	12.0	8.9	1.0	10.4	7.8
1995-97	3,394	24.5	5.2	6.0	10.9	14.3	9.4	1.2	14.0	6.6
Eastern Europe:										
1970-72	3,322	42.8	7.0	3.8	10.3	8.4	7.8	.5	5.6	8.0
1995-97	3,119	36.8	6.2	4.9	10.8	11.0	8.5	.5	8.9	6.0
Developing countries:										
1970-72	2,118	61.1	12.9	3.8	6.5	3.6	2.3	.6	4.3	1.0
1995-97	2,621	56.3	7.9	4.7	7.2	6.9	2.7	.8	7.4	1.3
North Africa:										
1970-72	2,307	64.3	3.6	5.6	8.6	2.8	2.6	.3	8.5	1.0
1995-97	3,187	62.2	4.0	5.9	9.2	3.6	2.5	.5	9.0	.7
Sub-Saharan Africa:										
1970-72	2,063	43.5	26.0	6.0	3.7	3.0	2.4	.7	6.7	.6
1995-97	2,176	46.2	23.8	5.4	3.9	2.9	2.4	.6	8.4	.5
Asia, developing:										
1970-72	2,068	67.1	11.5	2.9	5.3	3.0	1.7	.6	3.4	.9
1995-97	2,648	60.4	5.8	4.4	6.1	6.9	2.2	.9	6.7	1.3
Latin America and Caribbean:										
1970-72	2,483	39.3	12.5	6.3	15.8	7.7	5.3	.5	6.1	2.2
1995-97	2,791	36.9	8.3	5.5	16.9	10.9	6.1	.6	10.4	2.0

Source: Calculated by USDA's Economic Research Service from UN Food and Agriculture Organization data.

Figure 1
Cereals Still Largest Component of Average World Diet



Source: Calculated by USDA's Economic Research Service from UN Food and Agriculture Organization data.

Animal Fats Declined in Industrialized Countries' Diets

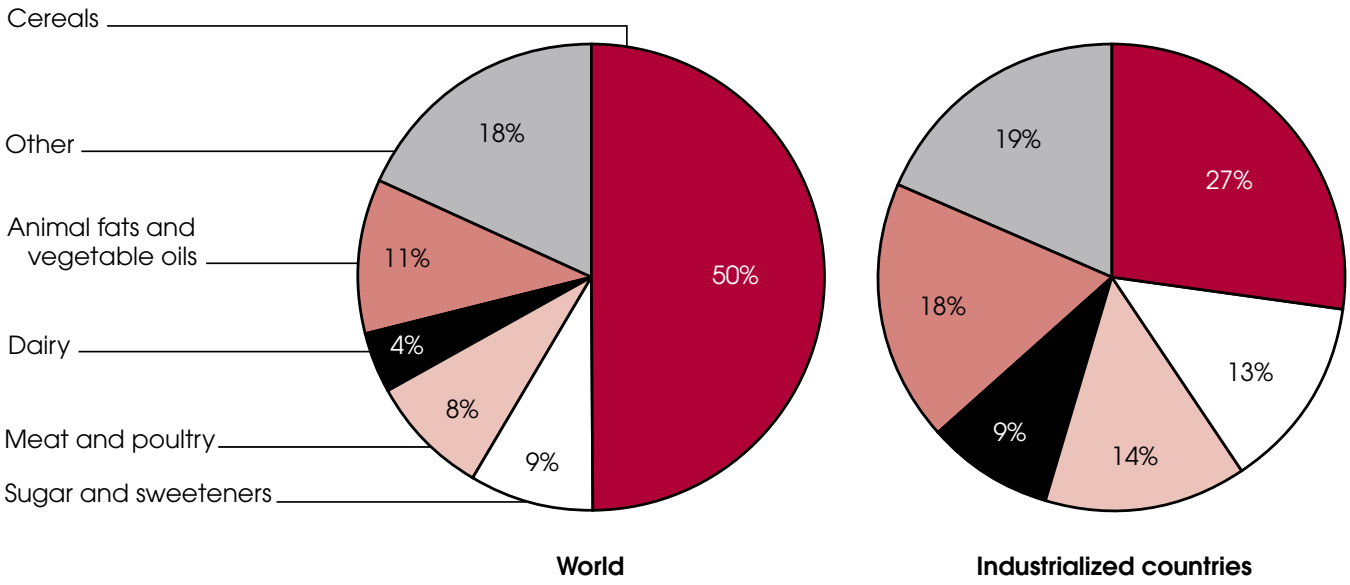
Diets in industrialized countries are much more diversified than the world's diet. The principal difference is the size of the cereals component, a relatively low-cost food item (fig. 2). Cereals comprised about only a quarter of the diet of the industrialized countries, reflecting these countries' higher incomes, while cereals made up half of the average world diet. Per capita incomes worldwide averaged $5,130 in 1997, compared with nearly $26,000 in industrialized countries.

Another major difference is the higher composition of fats and oils in the diet of the industrialized countries as compared with the world's. Animal fats and vegetable oils comprised over 18 percent of industrialized countries' calorie consumption, as opposed to less than 11 percent of the world's diet in 1995-97. This difference can be attributed to the larger quantities of fast food items, particularly french fries (which have a high fat content), consumed in industrialized countries. Meat and poultry's significant difference—14 percent in the industrialized countries in 1995-97 compared with 8.4 percent for the world—was also consistent with higher industrial incomes.

The most notable changes in the consumption patterns of industrialized countries since 1970 were in meat and poultry products, vegetable oils, and animal fats. Meat and poultry in industrialized countries' diets increased steadily from 12 percent in 1970-72 to 14 percent in 1995-97—clearly a reflection of rising incomes. Spurred in part by health concerns, industrialized countries increasingly substituted animal fats with vegetable oils. The animal fat share of calorie consumption declined from 6.1 percent in 1970-72 to 4.6 percent in 1995-97, commensurate with the rise in the vegetable oil share.

While consumption patterns of the United States and the European Union (EU) closely follow those of industrialized countries as a whole, there are some important distinctions. Most notable perhaps is the contrast in cereal consumption. Cereals' share of the U.S. diet grew from 19.5 percent in 1970-72 to 23.4 percent in 1995-97. On the other hand, cereals as a share of the EU diet declined from more than 26

Figure 2
Diet of Industrialized Countries Highly Diversified, 1995-97



Source: Calculated by USDA's Economic Research Service from UN Food and Agriculture Organization data.

percent in 1970-72 to 24.5 percent in 1995-97.

Also significant is the disparity between EU and U.S. consumption of animal fats. The share of dietary calories from animal fats in the EU is double that of the United States—6.6 percent versus 3.2 percent in 1995-97. Moreover, while the share has declined in the both regions, it has declined faster in the United States.

Developing Countries' Diets Becoming More Varied

Cereals and starchy roots and pulses are the most important component of developing countries' diet and, despite declining for 25 years, accounted for nearly two-thirds of the diet in these countries in 1995-97 (fig. 3). The changing composition of the diet in this group reflects rising incomes in many of the countries. As the share of cereals and starchy roots and

Credit: Frederick W. Crook

pulses fell, the share of fruits and vegetables, meat and poultry, and vegetable oils jumped markedly. For example, meat and poultry products accounted for only 3.6 percent of the developing country diet in 1970-72, but had nearly doubled by 1995-97, mostly fueled by changes in the Asian diet.

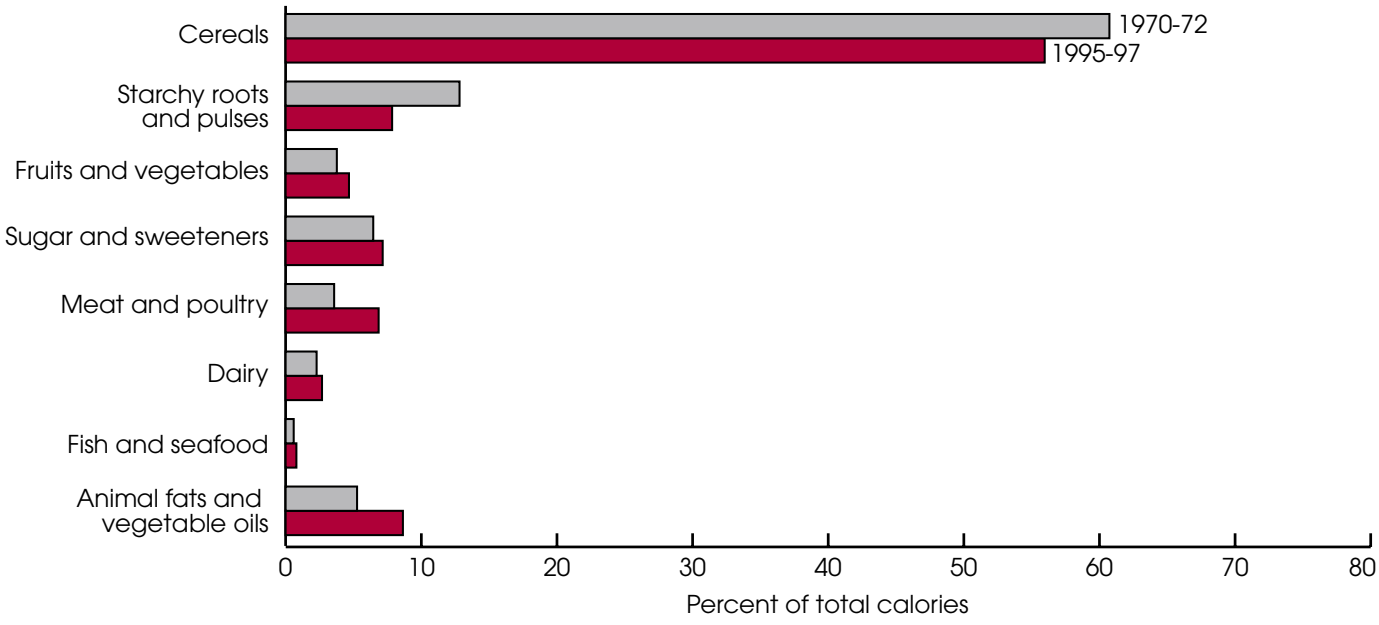
Consumption patterns and trends vary considerably among developing countries. Per capita incomes in several developing Asian countries have recorded strong growth over the last two and half decades, promoting significant changes in their diets. For these countries, per capita income levels grew from less than $800 a year to between $800 and $3,100, and consumption patterns evolved accordingly. Starchy roots and pulses were cut in half between 1970-72 and 1995-97, while meat and poultry more than doubled, reaching almost 7 percent in 1995-97. Fruit and vegetables' share of the Asian diet increased 50 percent, nearly equaling the world average. The cereal share of the diet, while declining from 67 percent in 1970-72 to just over 60 percent in 1995-97, continues to be nearly the highest in the world. This high share is clearly a reflection of rice as a traditional staple in the Asian diet.

While not as stunning, significant changes transpired in the Latin America and Caribbean diet as well. Again reflecting rising incomes in some of the countries in the region, the share of calories coming from meat and poultry products and vegetable oils jumped between 1970 and 1997. Meat and poultry rose 40 percent to nearly 11 percent of calories consumed, while vegetable oils jumped nearly 70 percent to more than 10 percent of calories consumed.

Gains Not Universal; Food Problems Persist

As opposed to developments in the other regions, composition of the diet in Sub-Saharan Africa changed only marginally since 1970. Cereals and starchy roots and pulses, low-cost foods, comprised 70 percent of the region's calorie consumption in 1995-97, while higher cost foods (meat and dairy products) that are a good source of vitamins and minerals were consumed at the lowest rates in the world. The low incomes that dominate the region prohibit most of the population from purchasing the quantity and types of foods that provide an adequate diet. Thirty-four of the 50 lowest income countries in the world are in Sub-Saharan Africa. In 1997, the average per capita income for the region was about $500 a year. Skewed income

Figure 3
The Share of Cereals in the Developing Country Diet Fell, While Total Fats and Meat Jumped



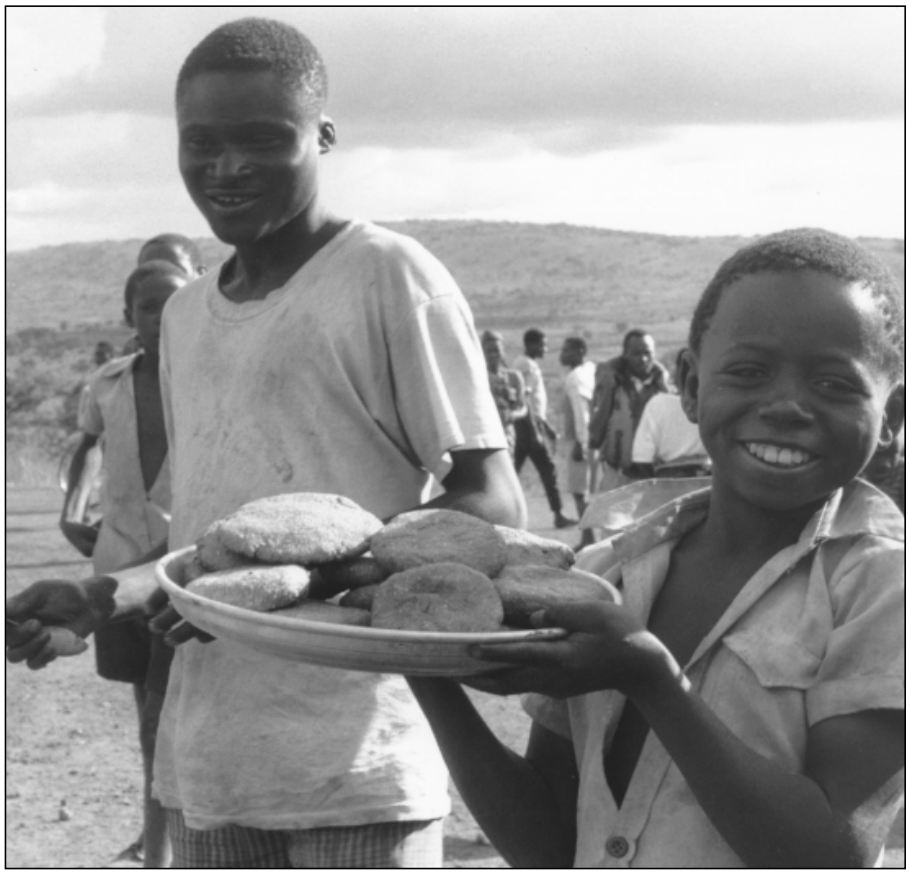
Source: Calculated by USDA's Economic Research Service from UN Food and Agriculture Organization data.

distribution in many countries exacerbates this problem. In most developing countries, the poorest 20 percent of the population holds only 4-8 percent of total national income, while the richest 20 percent holds nearly half. This inequality in purchasing power threatens the food security of the region.

Results from the annual *Food Security Assessment* by USDA's Economic Research Service (ERS) indicate that two-thirds of Sub-Saharan Africans were undernourished in 1998. ERS defines undernourishment as an available daily, per capita food supply of less than 2,100 calories. This calorie amount is the average energy level necessary to sustain life allowing for minimum food-gathering activities, about the activity level of a refugee.

Domestic food production accounts for more than 90 percent of food available for consumption in the poorer developing countries. Commercial imports, which augment food supplies, are constrained by limited foreign exchange in these countries. These poorest developing countries remain largely unsuccessful (principally due to lack of funds and training) in adopting new technologies to raise food crop yields and increase productivity, leaving people reliant on large families as the principal way to increase production. This will lead to little or no growth in per capita food supplies, stagnant or declining caloric consumption, and declining nutritional status.

To raise food consumption, it is essential to promote policies that accelerate agricultural growth. Increases in production would translate into a gradual increase in food supplies and an increase in export earnings to purchase food imports. A significant improvement in agricultural performance, however, requires innovative technologies that increase productivity of both land and labor. Such technologies are available in the least developed countries, but only experimentally and on a small scale. Improved production practices, such as mixed cropping, could further increase yields. Therefore, countries must disseminate new technologies to stimulate domestic production and improve consumption trends.



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Share of Food Spending for Eating Out Reaches 47 Percent

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The share of food dollars spent away from home climbed to an all-time high of 47 percent of food expenditures in 1998. Revisions based on the 1997 Economic Census by the Census Bureau of the U.S. Department of Commerce also show that 1998 expenditures for eating out have grown at a faster pace than retail food expenditures.

Food spending in the United States rose 3.6 percent to $756.2 billion between 1997 and 1998 (table 1). Total expenditures for eating out (food away from home) rose 4.6 percent, to $354.4 billion in 1998. Retail food expenditures (food at home) increased at a slower pace than 1997's 4.1-percent rise, up 2.8 percent to $401.8 billion.

Once adjusted for inflation, which was a low 1.6 percent in 1998, total food spending rose 1.4 percent in 1998—food at home was up 0.1 percent and food away from home rose 1.9 percent. The slower real (inflation-adjusted) growth for food at home than for food away from home reflects consumers' prosperity over the last year as they spent their higher incomes in restaurants, fast food outlets, coffee bars, and other eating places.

During the 1990-91 recession, real spending on food away from home declined 0.4 percent, while spending for food at home rose 1.3 percent. One of the ways people economized during the recession was by eating out less often or by going to less expensive places. The share of total food dollars spent away from home declined from 44.7 percent in 1989 to 44.1 percent in 1991.

With the subsequent economic recovery, spending on food away from home rose faster than spending for food at home. By 1993, spending for food away from home accounted for 46 percent of food expenditures.

Even at-home food expenditures reflect the relative prosperity of the last couple of years. A closer look at the industry shows much of the growth in food at home spending coming from time-pressed consumers picking up fully or partially prepared entrees and side dishes

Credit: USDA

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from their local supermarkets. These Home Meal Replacements (HMR's) or meal solutions are counted as food-at-home expenditures. A July 1999 study by *Takeout Business* indicated that the top 25 supermarket leaders in HMR's boosted their sales of fully or partially prepared foods by 36.2 percent in 1998, increasing HMR's sales to 3.6 percent of total sales for these stores.

Preliminary figures on total food sales (a beginning point for estimating food spending) in August 1999 show spending for food at home up 2.6 percent from the same period in 1998 and away-from-home food spending up 13.4 percent. Food sales exclude donations and food furnished to employees, patients, and inmates—all of which are included in the total food expenditures reported in table 1. Inflation-adjusted food sales from August 1998 to 1999 increased 2.3 percent for food at home, while away-from-home jumped 13.0 percent.

Personal Food Spending Rose 4 Percent

Personal food spending shows another perspective on the trend. It behaves differently from total food spending because it excludes expenditures by governments and businesses. Personal food expenditures rose 3.6 percent in 1998, while spending on housing, household supplies, fuel, and furniture went up 5.6 percent, and clothing expenditures increased 5.7 percent (table 2). Lower fuel prices in 1998 contributed to an increase of only 2.7

Updated Data Available

Newly revised figures will be available from USDA's Economic Research Service twice a year—spring and fall—through the Internet and the AutoFAX system.

Internet: Updated figures can be found on the Economic Research Service's website at: http://www.econ.ag.gov/briefing/foodmark/expend/expend.htm.

AutoFAX: To receive updates by AutoFAX, dial (202) 694-5700 using a telephone connected to a FAX machine, respond to the voice prompts, and order document #11530 (a list of all the available data tables can then be requested).

Please note, some FAX machines may have a "Hook" or "Manual polling" button or switch that allows the user to respond to the recorded voice prompts. On this type of FAX machine, you may listen to the voice prompts through a speaker and respond on the keypad. It may be necessary to press the start or send button to send the signal to the AutoFAX.

When responding to the voice prompts, please note: When asked for a yes or no response, press 1 for yes and 2 for no. You may interrupt the main menu choices to order the document by pressing 4—the system will then prompt you for the document number.

Table 1
Food Spending Rose 3.6 Percent in 1998

Expenditures	1994	1995	1996	1997	1998	Change, 1997-98
	Billion dollars					Percent
Total food and beverages[1]	728.9	757.0	788.3	826.8	848.6	2.6
Total food (excluding alcohol)	642.9	668.4	695.5	729.6	756.2	3.6
At-home food	347.9	361.6	375.4	390.7	401.8	2.8
Sales	340.8	354.6	368.6	384.0	395.2	2.9
Home production and donations	7.1	7.0	6.8	6.7	6.6	-1.5
Away-from-home food	295.0	306.7	320.1	338.9	354.4	4.6
Sales	268.4	279.4	292.0	309.2	323.6	4.7
Supplied and donated[2]	26.6	27.3	28.2	29.7	30.7	3.4
Alcoholic beverages	86.0	88.6	92.7	97.2	92.4	-5.2
Packaged	47.9	48.8	51.1	52.9	44.7	-18.3
Drinks	38.2	39.8	41.6	44.4	47.7	7.4

Notes: Data may not total due to rounding.
[1]Includes all food and alcoholic beverages, regardless of who paid for them.
[2]Includes Government subsidies for school lunch programs.
Source: Data are from USDA's Economic Research Service.

Table 2
Rise in Personal Food Expenditures Lower Than Increase in Disposable Personal Income[1]

Component	1997	1998	Change, 1997-98
	Billion dollars		*Percent*
Disposable personal income	5,795.1	6,027.9	4.0
Total personal consumption expenditures	5,493.7	5,807.9	5.7
Food	640.4	663.3	3.6
At home	387.1	398.3	2.9
Away from home	253.3	265.0	4.6
Alcoholic beverages	86.1	80.5	-7.0
At home	52.9	44.7	-18.3
Away from home	33.2	35.8	7.8
Nonfood	4,712.7	4,992.6	5.9
Housing, household supplies, fuel, furniture	1,428.5	1,508.7	5.6
Transportation, cars, gasoline	647.5	664.9	2.7
Medical care	843.4	888.2	5.3
Clothing and shoes	278.0	293.8	5.7
Other durable goods	132.1	141.9	7.4
Other nondurable goods	403.9	431.6	6.9
Other services	979.3	1,063.5	8.6
Other miscellaneous	54.5	71.5	31.2

Notes: Data may not add due to rounding. Food expenditures in this table are only those paid for by consumers with cash or food stamps. Total personal consumption expenditures is the sum of food, alcoholic beverages, and nonfood items.
[1]As of July 1999.
Sources: Food and alcoholic beverage data are from USDA's Economic Research Service. All other data are from the Bureau of Economic Analysis, U.S. Department of Commerce.

percent for personal spending on transportation, cars, and gasoline. Within personal food expenditures, spending for food away from home grew 4.6 percent compared with a 2.9-percent increase in expenditures for food at home. In 1997, personal spending for food away from home grew 3.9 percent and at-home personal food spending grew 3.8 percent.

In 1998, 11.0 percent of household disposable personal income was spent on food, down from 11.5 percent in 1988. Households spent 6.6 percent of their 1998 disposable personal income for food at home and 4.4 percent on food away from home. A decade earlier, Americans were spending 7.2 percent of their disposable personal income for food at home and 4.3 percent for food away from home. In 1998, Americans spent about 25 percent of disposable personal income on housing (including supplies, fuel, and furniture), 15 percent on medical care, and 11 percent on transportation (including cars and gasoline). ■

Desire for Convenience Drives Marketing Costs

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America's desire for convenience foods—meats cut up, marinated, and ready for the grill; entrees in microwavable packaging; individual juice boxes for bag lunches; and the large portion of our meals prepared by foodservice companies—translated into $466 billion worth of marketing costs in 1998.

Marketing costs accounted for 80 percent of the $585 billion consumers spent for domestic farm foods, not including imported foods, in 1998. The remaining 20 percent, or $119 billion, represents the gross return paid to farmers.

The cost of providing marketing services beyond the farm gate continues to be the most persistent source of rising food expenditures. Once again, the marketing bill outpaced the general inflation rate of 1.6 percent in 1998. The marketing bill grew $21.2 billion in 1998, an increase of 4.8 percent, following a similar rise in 1997. The farm value for domestic farm foods fell 2.5 percent in 1998, while consumer expenditures for these foods grew by 3.2 percent.

The cost of marketing U.S. farm foods has increased considerably over the years, mainly because of rising costs of labor, transportation, food packaging materials, and other inputs used in marketing, and also because of the growing volume of food and the increase in convenience and services provided with the food. These rising costs have been the principal factor affecting the rise in consumer food expenditures. From 1988 to 1998, consumer expenditures for farm foods rose $186 billion. Roughly 88 percent of this increase resulted from an increase in the marketing bill.

Labor Costs Continue To Dominate the Food Marketing Picture

The cost of labor is the biggest part of the total food marketing bill, accounting for nearly half of all marketing costs (fig. 1). Labor used by assemblers, manufacturers, wholesalers, retailers, and eating

Credit: Jack Harrison

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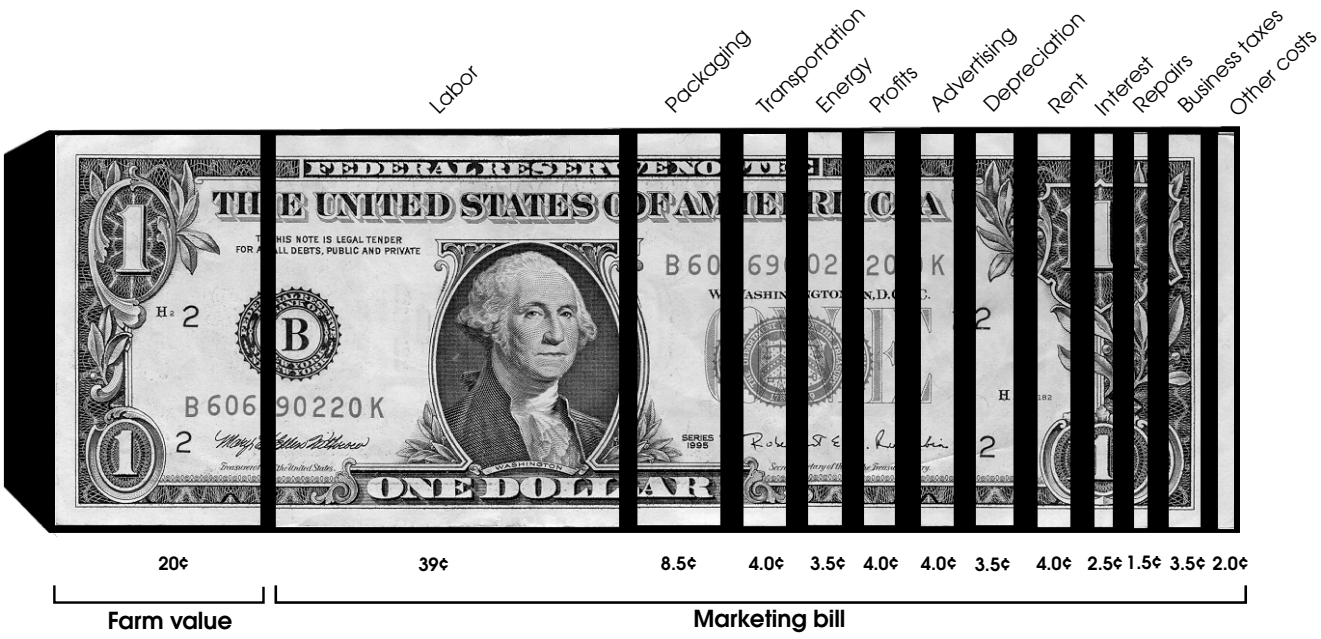
Figure 1
What a Dollar Spent for Food Paid for in 1998



Source: USDA's Economic Research Service.

places cost $228 billion in 1998, 5.1 percent higher than in 1997 and 65 percent more than in 1988.

The total number of food marketing workers in 1998 was about 13.8 million, up 1 percent from the previous year. The number of foodservice workers grew by 1.5 percent in 1998, while the number of workers in foodstores grew 0.1 percent. Foodstore employment was restrained by sluggish sales, while brisk away-from-home food sales stimulated employment growth in eating places. Employment in wholesaling grew 1.7 percent, while employment in food manufacturing was essentially unchanged. This stable employment in food manufacturing reflected long-term productivity improvements. These trends are consistent with the general pattern of the last few years.

Labor productivity in food manufacturing industries has risen moderately over the years, thereby causing a long-term decline in employment. This trend largely reflects the adoption of various technologies that have reduced industry demand for labor. On the other hand, labor productivity has declined in foodstores, reflecting increased demand for labor-intensive convenience foods prepared by supermarkets. The additional labor required to prepare these foods has raised employee hours relative to output, thereby accounting for the lowered productivity.

Food manufacturing employees' hourly earnings rose 2.8 percent in 1998, a slightly higher rate of increase than in 1997. Average hourly earnings of foodstore workers rose 4.3 percent, compared with 3.3 percent in 1997. Meanwhile, average hourly earnings of wholesaling employees rose 3.0 percent, a smaller increase than in 1997. The average hourly earnings of foodservice employees advanced at the fastest pace of any food industry sector for the third consecutive year, rising 4.8 percent. These higher growth rates generally reflect higher wages due to a tight labor supply resulting from robust economic conditions.

Wage supplements comprise about 20 percent of total labor costs. However, the cost of supplements has accelerated at a slower pace in recent years. For instance, medical costs have risen more slowly. The Consumer Price Index for medical services rose just 3.2 percent in 1998, compared with a 5.7-percent annual average increase over the last 10 years. Also, union contracts often require workers to pay a greater portion of their medical bills.

Other Inputs Add to Marketing Costs

A wide variety of other costs comprise the balance of the marketing bill, including packaging, transportation, energy, advertising, business taxes, net interest, depreciation, rent, and repairs (table 1).

Packaging is the second largest component of the marketing bill. At $50.4 billion, packaging accounted for 8.5 percent of the food dollar. Paperboard boxes and containers are the largest packaging cost and were the primary cause of higher packaging costs in 1998, rising 6.8 percent. This increase was mitigated by declines in other packaging materials. For example, plastics dropped 1.2 percent, while metal cans were 0.6 percent lower.

The energy bill for food marketing costs totaled $20.7 billion in 1998, accounting for 3.5 percent of retail food expenditures. Natural gas and electricity prices exert the greatest effect on the energy costs of processing and retailing food. The prices of alternative energy sources, such as oil, have little effect. Energy costs rose in 1998 because of higher natural gas prices and a higher volume of marketing services performed by the food industry.

Intercity truck and rail transportation for farm foods came to $24.4 billion, 4 percent of retail food expenditures in 1998. Rail freight rates rose about 3 percent, while trucking rates grew roughly 3.5 percent. Labor costs account for 40 percent of trucking expenses, with fuel comprising another 20 percent.

Advertising expenses totaled $22 billion, 4 percent of food expenditures in 1998. Food manufacturing accounts for about half of total food industry advertising expenditures, with foodservice contributing another 25 percent, and food retailing about 15 percent. A mix of print and broadcast media are used to promote food industry products. In recent years, increases in advertising expenditures have been largest for foodservice and food retail firms.

Depreciation, rent, and repairs together came to $53 billion and accounted for 9 percent of the 1998 consumer food dollar. The foodservice sector incurred about 40 percent of these costs, while foodstores made up about a quarter of the total. Manufacturing and wholesaling establishments together accounted for the remaining 35 percent. Thanks to high property rental expenses, foodservice establishments had the highest total depreciation, rent, and repair costs of any food sector.

Net interest accounts for only 2.5 percent of total consumer expenditures, but grew 34 percent during the last decade, rising to $13 billion in 1998. Most of the increase occurred in the foodstore sector, reflecting higher debt acquired due to merger and acquisition activity, particularly leveraged buyouts. Moreover, net interest grew as the result of loans booked during years of rising interest rates, such as 1995. ■

Table 1
Relative Importance of Labor Costs for Food Expenditures Has Grown Over Time

Component	1980	1985	1990	1995	1998
			Billion dollars		
Labor[1]	81.5	115.6	154.0	204.6	227.9
Packaging materials	21.0	26.9	36.5	47.7	50.4
Rail and truck transportation[2]	13.0	16.5	19.8	22.9	24.4
Fuels and electricity	9.0	13.1	15.2	18.6	20.7
Pretax corporate profits	9.9	10.4	13.2	19.5	22.2
Advertising	7.3	12.5	17.1	19.8	22.0
Depreciation	7.8	15.4	16.3	18.9	21.2
Net interest	3.4	6.1	13.5	11.6	13.0
Net rent	6.8	9.3	13.9	19.8	22.5
Repairs	3.6	4.8	6.2	7.9	9.0
Business taxes	8.3	11.7	15.7	19.1	20.6
Total marketing bill	182.7	259.0	343.6	415.7	465.8
Farm value	81.7	86.4	106.2	113.8	118.8
Consumer expenditures	264.4	345.4	449.8	529.5	584.6

[1]Includes employees' wages/salaries and health and welfare benefits.
[2]Excludes local hauling charges.
Source: USDA's Economic Research Service.

Food-Away-From-Home Sales at a Glance, 1988-98

Fast Food Sales Continue To Outpace Sales at Restaurants and Lunchrooms

Industry segment	Sales 1988	Sales 1997	Sales 1998	Change, 1988-98
	Million dollars			*Percent*
Commercial foodservice	155,702	244,732	256,488	65
Fast food outlets	65,749	100,851	102,387	56
Restaurants and lunchrooms	61,888	94,332	100,792	63
Cafeterias	3,473	3,619	3,771	9
Caterers	1,214	1,480	1,975	63
Lodging places	9,968	14,068	14,417	45
Retail hosts	7,120	17,481	18,819	164
Recreation and entertainment	4,754	11,190	12,455	162
Separate drinking places	1,536	1,711	1,872	22
Noncommercial foodservice	44,231	61,730	63,631	44
Education	14,105	23,166	24,167	71
Elementary and secondary schools	7,074	11,318	11,717	66
Colleges and universities	7,061	11,848	12,450	76
Military services	1,792	1,928	1,930	8
Troop feeding	1,032	1,070	1,054	2
Clubs and exchanges	760	858	876	15
Plants and office buildings	4,670	6,991	7,335	57
Hospitals	3,590	3,534	3,424	-5
Extended care facilities	5,392	6,302	6,740	25
Vending	5,471	5,436	5,000	-9
Transportation	3,994	4,640	4,852	21
Associations	1,030	1,758	1,905	85
Correctional facilities	1,678	3,276	3,470	107
Child daycare centers	807	1,937	2,076	157
Elderly feeding programs	142	174	173	22
Other noncommercial[1]	1,560	2,588	2,559	64
Total foodservice sales	199,933	306,462	320,119	60

Note: Foodservice sales exclude sales taxes and tips.
[1]Includes more categories in 1997-98 than in 1988.
Source: USDA's Economic Research Service. For more information, contact Charlene Price at (202) 694-5384 or ccprice@econ.ag.gov.

Fewer Food Products Introduced in Last 3 Years

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New food product introductions declined for the third consecutive year in 1998—a sharp reversal of the escalating increases prevalent during the previous three decades.

In 1998, food introductions declined by 11 percent, dropping to 11,037, compared with 12,398 in 1997 (table 1). This drop followed a 7-percent drop in 1997 and a 21-percent drop in 1996. In 1998, new product introductions were 35 percent below 1995's all-time high of nearly 17,000 food product introductions.

New product introductions include different sizes, colors, and flavors; seasonal and regional items; and products sold specially in gourmet, health food, and drug stores. Many introductions are only changes in size or color, and not new in the sense of being truly innovative. Moreover, despite the introduction of 116,000 products since 1990, the number of total products stocked in the Nation's grocery stores has grown just slightly. This suggests that new products replace existing products or are removed from grocery store shelves soon after their introductions.

Declines in Almost Every Category

With the exception of soups, all food product categories showed declines in introductions when comparing 1998's introductions with 1995's. The number of bakery products dropped from 1,855 in 1995 to 1,178 in 1998, while new beverage introductions fell from 2,854 to 1,547. New condiment introductions dropped from 3,698 in 1995 to 1,994 in 1998.

Introductions of desserts, entrees, and processed meats increased over the last 3 years, but 1998 introductions were still lower than in 1995.

Introductions for nonfood products sold in grocery stores continued to rise during the 1995-98 period. Introductions of new health and beauty aids offset declines in other categories, such as household supplies and paper products. Pet and tobacco introductions, which rose in 1997, dropped in 1998.

Credit: USDA

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Table 1
Food Product Introductions 35 Percent Lower in 1998 Than in 1995

Item	1990	1993	1995	1996	1997	1998
			Number			
Food products	10,301	12,893	16,863	13,266	12,398	11,037
Baby food	31	7	61	25	53	35
Bakery foods	1,239	1,420	1,855	1,340	1,200	1,178
Baking ingredients	307	383	577	419	422	295
Beverages	1,143	1,842	2,854	2,003	1,606	1,547
Breakfast cereals	123	99	128	121	83	84
Candy/gum/snacks	1,486	2,043	2,462	2,310	2,505	2,065
Condiments	2,028	3,147	3,698	2,815	2,631	1,994
Dairy	1,327	1,099	1,614	1,345	862	940
Desserts	49	158	125	100	109	117
Entrees	753	631	748	597	629	678
Fruits and vegetables	325	407	545	552	405	375
Pet food	130	276	174	121	251	105
Processed meat	663	453	790	637	672	728
Side dishes	538	680	940	611	678	597
Soups	159	248	292	270	292	299
Nonfood products	2,942	4,673	5,709	6,306	6,926	6,940
Health and beauty care	2,379	3,863	4,897	5,702	6,226	6,477
Household supplies	317	467	472	290	311	223
Paper products	174	145	99	91	60	69
Tobacco products	31	38	102	54	127	51
Pet products	42	160	139	169	202	120
Total product introductions	13,244	17,566	22,572	19,572	19,324	17,977

Source: *New Product News.*

Table 2
Products Bearing Low-Fat and Low-Calorie Claims Dropped Sharply Between 1995 and 1998

Health claim	1990	1993	1995	1996	1997	1998
			Number			
Reduced/low calorie	1,165	609	1,161	776	742	456
Reduced/low fat	1,024	847	1,914	2,076	1,405	1,180
All natural	754	449	407	645	587	743
Reduced/low salt	517	242	205	171	87	80
No additives/preservatives	371	543	167	143	142	149
Low/no cholesterol	694	287	163	223	106	124
Added/high fiber	84	51	40	12	33	43
Reduced/low sugar	331	473	422	373	78	164
Added/high calcium	20	14	21	35	28	45
Organic	324	385	538	645	505	842

Note: Numbers in health claims categories add to more than the total number of new products in a given year, as new products may carry more than one claim.
Source: *New Product News.*

Table 3
Largest 20 Food Companies Account for 10 Percent of Introductions in 1998

Food product introductions	1994	1995	1996	1997	1998
			Number		
Total	15,006	16,863	13,266	12,398	11,037
Largest 20 companies	1,756	1,847	1,528	1,430	1,150
			Percent		
Largest 20 companies	11.7	10.9	11.5	11.5	10.4
Other companies	88.3	89.1	88.5	88.5	89.6

Note: Largest 20 for each year represents that year, and does not take into account subsequent changes in ranking.
Source: *New Product News.*

Why the Declines?

Several factors appear to have contributed to the declines in new product introductions. Introductions of new low-fat and low-calorie foods dropped sharply. Waning interest in low-fat and low-calorie foods may be part of the answer. Or perhaps, food processors have already mined the low-fat versions of popular foods. Introductions of new reduced- and low-fat products fell from 1,914 in 1995 to 1,180 in 1998, while reduced- and low-calorie introductions dropped from 1,161 to 456 (table 2). Introductions of lower salt foods, foods with no additives, and reduced-sugar foods were all lower in 1998 than in 1995.

Instead, food companies seem to have turned their attention to foods where positive nutrients have been enhanced. New foods claiming to have higher levels of calcium increased from 21 in 1995 to 45 in 1998, while high-fiber food introductions increased from 40 to 43. Introductions of organic and all-natural foods continue to rise.

Mergers and acquisitions and other structural realignments may also have contributed to the declining number of introductions. Since the beginning of the 1990's, there have been nearly 1,000 mergers and acquisitions in the food processing sector. The aftershocks of these mergers may well be reflected in the declining number of introductions as fewer companies are responsible for a larger share of the food products on U.S. supermarket shelves. New products are a way of competing for consumers' food dollars. Also, these newly expanded food manufacturing firms may wish to concentrate their development and marketing resources on their core brand products.

Retailers' tight controls over inventories may also contribute to the decline in new products. In today's highly competitive food sector, retailers are trying to efficiently meet consumer demand by stocking proven products and not risking inventory surpluses of products that will not sell well. Thus, retailers may be less willing to gamble on new products, leading to fewer product introductions.

Limited Shelf Space Comes at a Price

The introduction of a new product poses a problem for U.S. retailers because of insufficient shelf space to accommodate all the new sizes, shapes, tastes, and other attributes that result in new products. USDA's Economic Research Service estimates the number of packaged food products available to American consumers to be about 320,000. However, a typical supermarket can accommodate only 50,000 products, including nonfood items. Retailers sometimes charge manufacturers fees, or slotting allowances, to stock new products. Retailers justify slotting allowances as a way to protect their profits if a new product that takes up scarce shelf space does not sell well.

Smaller companies may find paying slotting allowances a barrier to getting their new products on supermarket shelves. However, small- and medium-sized companies created the bulk of the new product introductions in 1998 (table 3). The largest 20 food companies were responsible for just one-tenth of new product introductions in 1998.

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Domestic Food Assistance Expenditures Drop Again

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In the first 6 months of fiscal 1999 (October 1998-March 1999), USDA's spending on domestic food assistance programs fell. If this trend continues for the entire year, it will mark the third consecutive year in which annual expenditures on food assistance programs declined.

USDA spent $17.2 billion on domestic food assistance programs in the first half of 1999, almost 3 percent less than in the same period in fiscal 1998 (table 1). In fiscal 1998, total annual food assistance expenditures were 6 percent less than the previous fiscal year.

The food assistance programs administered by USDA take a variety of forms, providing different types of benefits to various target groups. However, three food assistance programs accounted for 85 percent of USDA's total food assistance expenditures during the first half of fiscal 1999: the Food Stamp Program, the National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

Most of the decrease in food assistance expenditures during the first half of fiscal 1999 was due to the contraction of the Food Stamp Program. The $9 billion in expenditures for the program in the first half of fiscal 1999 was 7 percent lower than in the same period the previous year. This decrease was largely the result of the continuing decline in program participation, partly attributable to the Nation's favorable economic conditions and low unemployment rate. An average 18.5 million people per month received food stamps during the first 6 months of fiscal 1999, nearly 1.9 million fewer people than in the first half of fiscal 1998. At its peak in fiscal 1994, participation in the Food Stamp Program averaged 27.5 million people per month.

Credit: USDA

The author is an agricultural economist with the Food and Rural Economics Division, Economic Research Service, USDA.

Table 1
Food Assistance Program Outlays Continue To Decline in First Half of Fiscal 1999

Program	Fiscal 1998 expenditures		First half of fiscal 1999 expenditures[1]	
	Total	October-March	October-March	Change from first half of fiscal 1998
	Million dollars		*Million dollars*	*Percent*
Food stamp-related programs	20,130.5	10,326.3	9,647.5	-6.6
Food Stamp Program[2]	18,916.1	9,719.1	9,024.3	-7.1
Nutrition Assistance Programs[2]	1,214.4	607.2	623.2	2.6
Child nutrition programs[3]	9,049.8	5,189.2	5,324.0	2.6
National School Lunch	5,828.3	3,586.0	3,673.0	2.4
School Breakfast	1,271.2	769.0	795.7	3.5
Child and Adult Care[2]	1,552.1	779.4	802.1	2.9
Summer Food Service[2]	261.5	4.9	4.2	-14.3
Special Milk	17.0	9.2	9.0	-2.2
Supplemental food programs	3,983.3	1,930.2	1,989.1	3.1
WIC[2]	3,890.0	1,883.2	1,938.7	2.9
Commodity Supplemental Food Program[2]	93.3	47.0	50.4	7.2
Food donation programs	457.4	206.1	218.8	6.2
Food Distribution on Indian Reservations[2]	71.6	34.3	35.9	4.7
Nutrition Program for the Elderly	141.1	69.4	68.6	-1.2
Disaster Feeding	.3	.1	.5	400.0
TEFAP	235.1	100.9	110.7	9.7
Charitable Institutions and Summer Camps	9.2	1.4	2.9	107.1
All programs[4]	33,728.5	17,702.5	17,228.7	-2.7

[1]Data are reported as of March 1999 and are subject to revision.
[2]Includes administrative expenses.
[3]Total includes the Federal share of State administration expenses.
[4]Total includes Federal food program administration expenses.
Source: U.S. Department of Agriculture, Food and Nutrition Service, *Program Information Report (Keydata), U.S. Summary,* March 1999, revised tables 29, 29b, and 29c.

In contrast to the Food Stamp Program, expenditures for both the National School Lunch Program and the WIC program increased slightly during the first half of fiscal 1999. Expenditures for the National School Lunch Program totaled $3.7 billion in the first half of fiscal 1999, up 2 percent over the same period in fiscal 1998. Expenditures for the WIC program increased 3 percent to $1.9 billion between the first half of fiscal 1999 and the same period in fiscal 1998.

Most of the smaller food assistance programs administered by USDA expanded during the first half of fiscal 1999.

Processed Food Imports Surpass Exports in 1998

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U.S. exports of processed food and beverages fell 6 percent in 1998 to $29.4 billion from a record $31.3 billion in 1997. This was the first decline in processed food exports after over two decades of steady growth. Processed food accounts for well over half of total U.S. agricultural exports.

In contrast, processed food imports continued to grow in 1998, increasing 5.8 percent to a record $32.0 billion. Imports exceeded U.S. exports of processed food by $2.6 billion, resulting in the first trade deficit since 1991 (fig. 1). U.S. processed food trade surpluses had narrowed in each of the previous 3 years. The United States had trade surpluses of $1.0 billion, $2.4 billion, and $4.4 billion in 1997, 1996, and 1995, respectively.

The trade deficit for processed foods is expected to widen in 1999. Processed food exports fell another 8.8 percent during the first half of 1999. On the other hand, a strong U.S. economy finds Americans spending their rising incomes on French wines, Canadian seafood, and other imported foods and beverages. Imports of processed food grew 6.7 percent in the first half of 1999 over the first half of 1998. As a result, the processed food trade deficit was $2.6 billion for the first 6 months of 1999, and could surpass $5 billion for the full year.

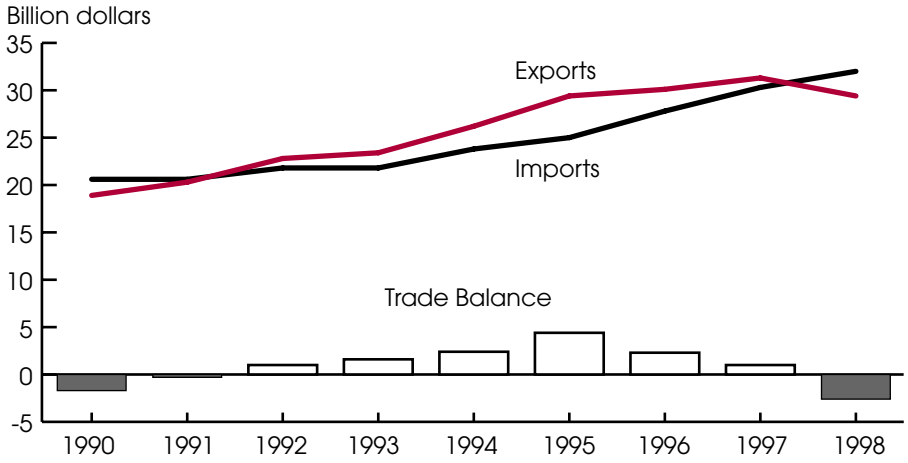
This article examines exports and imports of processed foods, beverages, and related products that fall under the Standard Classification Code 20 for Food and Kindred Products (SIC-20). SIC-20 contains 49 separate food processing industries, including fish and seafood, distilled liquors, animal feeds, pet food, and fats and oils. The processing may be minor, such as for tomato paste, or more extensive, such as for frozen, prepared dinners.

Exports Decline in 1998...

After growing 4 percent in 1997, processed food exports declined 6 percent in 1998. The decline was broad-based; 32 processed food industries had lower exports in 1998 compared with 1997 (table 1). Only two of the top 10 export industries had larger exports in 1998 than in 1997. Canned fruit and vegetable exports were up 3 percent, and rice milling exports inched up 1 percent in 1998.

Meatpacking (including hides and skins) saw 1998 exports decline 10 percent to $5.2 billion, down for the third straight year, yet retained its top ranking. Most of the 3-year decline came from lower sales of

Figure 1
U.S. Processed Food Trade Deficit First Since 1991



Source: USDA's Economic Research Service.

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Table 1
Most U.S. Food Exports Declined Between 1997 and 1998

Industry[1]	Exports 1997	Exports 1998	Change 1996-97	Change 1997-98
	Million dollars		*Percent*	
Meatpacking	5,754	5,199	-4.2	-9.6
Soybean oil mills	3,176	2,997	49.3	-5.6
Poultry processing	2,532	2,255	-2.1	-10.9
Fresh or frozen fish and seafood	2,270	1,683	-8.8	-25.9
Wet corn milling (oil and syrup)	1,596	1,481	1.0	-7.2
Other food preparations	1,288	1,218	5.8	-5.4
Canned fruits and vegetables	1,114	1,144	7.6	2.7
Salted and roasted nuts and seeds	1,030	976	-15.9	-5.3
Frozen fruits and vegetables	879	872	6.8	-.8
Rice milling	814	822	-10.7	.9
Animal and marine fats and oils	792	894	-10.9	12.9
Flavorings, extracts, and syrups	774	700	-1.7	-9.6
Dry, condensed, and evaporated milk	758	747	39.3	-1.5
Dried fruits and vegetables	704	671	4.2	-4.7
Distilled and blended spirits	691	544	.6	-21.3
Prepared animal feed	624	553	5.2	-11.4
Pet food	621	681	16.3	9.6
Vegetable oil milling	482	537	10.4	11.4
Chocolate and cocoa products	434	390	8.6	-10.2
Wines, brandy, and brandy spirits	423	543	28.2	28.3
Malt beverages	418	338	-7.8	-19.1
Sausage and prepared meats	386	357	160.0	-7.4
Processed fishery products	339	345	-19.4	1.8
Flour and grain mill products	330	296	-5.3	-10.4
Sauces and salad dressings	309	301	9.7	-2.7
Soft drinks and carbonated water	259	260	20.2	.6
Bread and other bakery products	248	276	8.0	11.4
Candy and other confectionery products	234	218	23.8	-6.8
Potato chips	225	303	1.3	34.7
Roasted coffee	214	225	7.3	5.1
Breakfast cereals	183	229	3.1	25.3
Shortening and cooking oils	151	176	11.3	16.6
Blended and prepared flours	147	137	5.6	-6.9
Cookies and crackers	134	121	15.9	-9.7
Natural and processed cheese	123	117	17.7	-5.1
Cane and beet sugar	175	159	38.6	-9.1
Ice cream and frozen desserts	90	87	-4.4	-3.0
Cottonseed oil milling	88	73	10.5	-17.2
Chewing gum	86	81	37.2	-5.3
Canned specialties	85	75	-1.8	-12.1
Other frozen specialties	72	43	25.7	-40.4
Frozen bakery products, except bread	64	62	3.6	-3.3
Pasta products	56	113	31.7	103.3
Fluid milk	51	43	19.6	-15.2
Malt	48	44	8.3	-9.2
Creamery butter	26	14	-37.5	-46.1
Manufactured ice	7	8	47.5	21.0
Total, all industries	31,305	29,410	3.9	-6.1

[1]These industries correspond to the 49 classified in the Standard Industrial Classification Code 20 (SIC-20).
Source: USDA's Economic Research Service.

hides and skins; 1998 also saw lower meat sales to South Korea and Japan. Poultry exports were down 11 percent, reflecting sharply lower sales to Russia.

Exports of fresh and frozen fish fell for 3 consecutive years due to poor U.S. fish harvests and weak demand in Japan and several other countries. Fresh and frozen fish exports had the largest dollar decline of all processed food industries, falling $586.8 million, or 26 percent.

Still, there were several bright spots in the export picture. Many highly processed products continued to show strong export performance in 1998. Bread and other bakery exports increased 11 percent to $276 million; breakfast cereals were up 25 percent to $229 million; potato chips, up 35 percent to $303 million; shortening and cooking oils, up 17 percent to $176 million; and pasta exports more than doubled from $56 million to $113 million.

Wine and brandy exports also continued their strong growth, up 28 percent in both 1998 and 1997, following a 34-percent increase in 1996. However, malt beverage exports declined 19 percent in 1998, while distilled spirits exports decreased 21 percent.

... as Asian and European Countries Cut Back on U.S. Purchases

Japan is the largest export market for U.S. processed food, but its share of U.S. exports has been falling for the last 3 years from 24 percent in 1996 to 19 percent in 1998 (table 2). Exports to Japan fell 12 percent in 1998 following an 11-percent decline in 1997. During this same 3-year period, Canada's share of U.S. exports rose from 15 to 18 percent, while Mexico's share increased from 7 to 10 percent.

One reason for the decline in processed food exports was the sharp decline in U.S. exports to the seven "Asia Crisis" countries (South Korea, Taiwan, the Philippines, Singapore, Thailand, Indonesia, and Malaysia). Exports to South Korea and Taiwan, both among the United States' top 10 export markets, fell 38 percent and 21 percent, respectively, in 1998. Exports declined to the remaining Asia Crisis countries by the following amounts: Philippines, 12 percent; Singapore, 25 percent; Thailand, 27 percent; Indonesia, 51 percent; and Malaysia, 33 percent.

Other weak spots for U.S. exports in 1998 were Hong Kong, off 17 percent; Russia, down 30 percent; and most countries in Europe. Exports to the Netherlands and France declined the most—24 percent and 22 percent, respectively. China was the only Asian country with an increase in U.S. exports in 1998—up 30 percent over 1997.

The outlook for markets for 1999 exports differs widely from 1998. Many countries reversed their 1998 purchase patterns during the first half of 1999. While exports to all seven Asia Crisis countries declined in 1998, exports increased to all seven during the first half of 1999. Exports to the largest markets, South Korea and Taiwan, were up 40 and 18 percent. Exports to the smaller markets of Malaysia and Indonesia were up 48 and 50 percent, while exports to the Philippines, Thailand, and Singapore rose

Table 2
Japan and Canada Are the Largest Markets for U.S. Processed Foods

Market	Exports 1997	Exports 1998	Share of processed food exports	Change 1996-97	Change 1997-98
	Million dollars		*Percent*	*Percent*	
Japan	6,433.8	5,672.9	19.3	-10.8	-11.8
Canada	5,027.6	5,250.0	17.9	10.5	4.4
Mexico	2,399.1	2,853.5	9.7	19.6	18.9
Hong Kong	1,280.0	1,060.1	3.6	14.6	-17.2
South Korea	1,533.8	947.6	3.2	1.5	-38.2
United Kingdom	862.4	850.3	2.9	4.1	-1.4
China (Mainland)	649.3	841.3	2.9	16.8	29.6
Russia	1,163.7	819.7	2.8	-9.2	-29.6
The Netherlands	849.8	649.3	2.2	-9.2	-23.6
China (Taiwan)	818.1	643.1	2.2	8.5	-21.4

Source: USDA's Economic Research Service.

from 4 percent to 8 percent. China saw a major reversal with exports diving from a 30-percent increase in 1998 to -62 percent in the first half of 1999, largely due to a sharp decline in soybean oil sales to China.

Latin America went from an increasingly strong market for U.S. exports in 1998 to a declining market in the first half of 1999. Exports to Mexico fell 5 percent; Brazil, off 35 percent; Venezuela, down 10 percent; and Chile, down 37 percent. On top of this, exports to Russia continued a rapid decline. U.S. processed food exports to Russia fell 83 percent in the first half of 1999, following a 30-percent decline in 1998.

In addition, Europe is expected to remain a weak export destination in 1999. Exports for the first half of 1999 declined, ranging from 9 percent for the United Kingdom to 44 percent for Italy. Only the Netherlands had an increase in U.S. exports, 6 percent in the first half of 1999, following a 24-percent decrease in 1998.

Import Growth Continues

Imports to the United States increased in 1998 but at a slower rate than in the previous 2 years. Imports grew 5.8 percent, down from 9 percent in 1997 and 11 percent in 1996. Import growth was spread broadly across the food processing sector—only 12 of the 49 food processing industries had a decline in imports (table 3). Among the top 10 import industries, only 2 (canned fruits and vegetables, and vegetable oil milling) had lower imports in 1998 than in 1997.

Fresh and frozen fish remains the United States' largest processed food import, up almost 4 percent to $6.5 billion. (Fish is also our fourth largest food export.) Fish imports come primarily from Canada, Thailand, Mexico, Ecuador, Chile, and China.

Credit: Port of Long Beach

Imports of meatpacking products reached $3 billion in 1998, less than half the value of U.S. fish and seafood imports. In addition to being the second-largest import industry, meatpacking is the largest U.S. processed food export industry. While the United States primarily exports fresh and frozen cuts of beef and pork, imports are largely frozen ground beef in bulk containers and lamb from Australia and New Zealand.

The third-, fourth-, and fifth-largest import industries are all alcoholic beverages. Imports of wines and brandy, distilled spirits, and malt beverages into the United States grew by 10 percent, 5 percent, and 14 percent, respectively, in 1998. Collectively, these three industries account for 18 percent of total U.S. processed food imports. Major sources of alcoholic beverage imports are Canada, France, United Kingdom, Italy, the Netherlands, and Mexico. Wine and distilled spirits account for three-quarters of all processed food and beverage imports from France, while distilled spirits and malt beverages make up two-thirds of total processed food imports from the United Kingdom. Canned fruits and vegetables dropped from the third-largest import industry in 1996 to seventh place as imports fell 14 percent in 1998.

Pasta imports were up 7 percent to $312 million in 1998, following a 9-percent increase in 1997, despite the opening of a large pasta manufacturing plant in Ames, Iowa, by Italy's largest pasta manufacturer and exporter to the United States. America continued to satisfy its sweet tooth as chocolate and cocoa product imports rose 13 percent in 1998, on top of a 6-percent increase in 1997. In addition, candy and confectionery products were up 17 percent, while imports of cookies and crackers jumped 34 percent in 1998.

Table 3
Leading Processed Food Import Industries

Industry[1]	Imports 1997	Imports 1998	Change 1996-97	Change 1997-98
	Million dollars		*Percent*	
Fresh or frozen fish and seafood	6,300	6,531	15.9	3.7
Meatpacking	2,850	3,024	14.1	6.1
Wines, brandy, and brandy spirits	2,031	2,239	17.8	10.3
Distilled and blended spirits	1,772	1,851	3.4	4.5
Malt beverages	1,514	1,732	12.9	14.4
Chocolate and cocoa products	1,471	1,666	5.1	13.3
Canned fruits and vegetables	1,799	1,555	3.9	-13.6
Processed fishery products	1,327	1,493	13.1	12.5
Vegetable oil milling	1,516	1,443	2.9	-4.8
Other food preparations	1,219	1,432	11.5	17.4
Cane and beet sugar	1,095	884	-8.7	-19.3
Frozen fruits and vegetables	743	855	1.6	15.1
Dry, condensed, and evaporated milk	583	669	-6.2	14.8
Natural and processed cheese	548	635	-6.1	15.8
Candy and other confectionery products	452	530	8.4	17.3
Salted and roasted nuts and seeds	493	518	10.8	5.1
Soft drinks and carbonated water	485	504	25.0	4.0
Sauces and salad dressings	343	381	7.5	11.1
Roasted coffee	315	372	4.7	18.1
Dried fruits and vegetables	315	363	15.0	15.2
Cookies and crackers	266	355	18.8	33.5
Bread and other bakery products	364	343	1.1	-5.9
Pasta products	292	312	8.6	6.8
Wet corn milling (oil and syrup)	266	303	-6.7	13.9
Prepared animal feed	244	228	-.8	-6.6
Rice milling	207	195	27.0	-5.8
Animal and marine fats and oils	186	162	24.0	-12.9
Pet food	144	149	13.4	3.5
Breakfast cereals	151	139	23.8	-7.9
Sausage and prepared meats	134	137	-1.5	2.2
Blended and prepared flours	83	112	38.3	34.9
Shortening and cooking oils	87	108	6.1	24.1
Chewing gum	101	108	18.8	6.9
Frozen bakery products, except bread	81	102	6.1	25.9
Flavorings, extracts, and syrups	106	98	-10.5	-7.5
Canned specialties	70	88	22.8	25.7
Flour and grain products	91	83	-14.2	-8.8
Creamery butter	20	73	122.2	265.0
Soybean oil milling	65	55	-21.7	-15.4
Poultry processing	46	53	1.0	15.2
Manufactured ice	24	50	-6.6	108.3
Potato chips	33	42	10.0	27.3
Malt	21	17	-8.7	-19.0
Fluid milk	10	15	11.1	50.0
Other frozen specialties	8	8	33.3	0
Cottonseed oil milling	*	8	*	*
Ice cream and frozen desserts	4	7	16.3	75.0
Total, all industries	30,278	32,028	9.1	5.8

*Less than $0.5 million.
[1]These industries correspond to the 49 classified in the Standard Industrial Classification Code 20 (SIC-20).
Source: USDA's Economic Research Service.

Table 4
Canada Is the Largest Source of U.S. Food Imports

Source	Import 1997	Import 1998	Share of processed food imports	Change 1996-97	Change 1997-98
	Million dollars		*Percent*	*Percent*	
Canada	6,349.0	6,881.7	21.0	12.1	8.4
Mexico	2,085.4	2,360.9	7.4	16.1	13.2
Thailand	1,649.4	1,830.0	5.7	4.1	10.9
France	1,554.3	1,728.3	5.4	13.1	11.2
Italy	1,369.4	1,375.8	4.3	4.7	.5
Australia	837.0	1,019.1	3.2	17.0	21.8
United Kingdom	935.1	1,009.3	3.2	8.5	6.0
The Netherlands	913.2	968.2	3.0	3.5	7.9
New Zealand	864.6	963.1	3.0	10.5	11.4
Philippines	748.4	743.3	2.3	8.9	-.7

Source: USDA's Economic Research Service.

Import Sources Remain Stable

Sources of processed food imports are more diverse than U.S. export destinations. The top 10 import sources accounted for 60 percent of total U.S. imports, while the leading 10 export destinations accounted for 67 percent of U.S. exports. Canada is by far the largest supplier of imports with a 21-percent share of the U.S. market, nearly three times larger than second-place Mexico (table 4). Major imports from Canada include meat products, fish, and vegetable oils. Leading imports from Mexico are fish, beer and distilled spirits, and processed fruits and vegetables. Thailand was the third-largest import supplier in 1998 due to its strong sales of fresh and frozen fish and canned tuna.

For all of 1999, U.S. imports will likely grow slightly faster than in 1998. During the first half of 1999, imports from Canada and Mexico were up 9 percent and 10 percent, respectively. France replaced Thailand as the third-largest import supplier as its imports increased 17 percent. Imports from the United Kingdom advanced 24 percent, moving that country up into sixth place. And China's processed food sales to the United States grew 22 percent in the first 6 months of 1999, moving that country into the list of top 10 suppliers for the first time.

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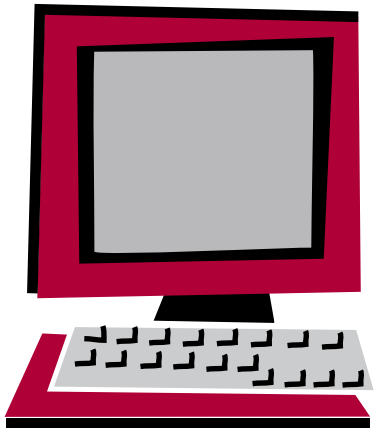

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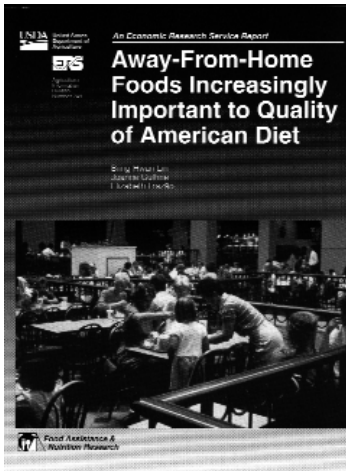
Food Consumption and Spending

A Dietary Assessment of the U.S. Food Supply by Linda Scott Kantor, ERS. Agricultural Economic Report 772. Most American diets do not meet Federal Food Guide Pyramid dietary recommendations. On average, people consume too many servings of added fats and sugars and too few servings of fruits, vegetables, dairy products, lean meats, and foods made from whole grains. This report is the first dietary assessment to use ERS's time-series food supply data to compare average diets with Federal dietary recommendations depicted in the Food Guide Pyramid. December 1998. Stock # ERS-AER-772. $16.00.

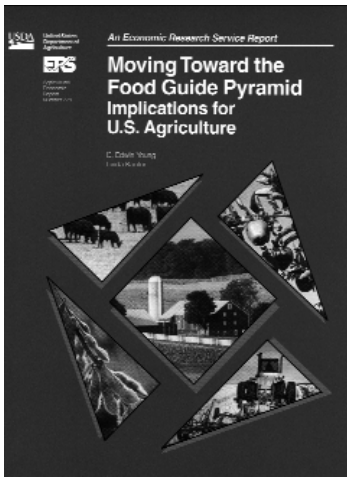
America's Eating Habits: Changes and Consequences, edited by Elizabeth Frazão, ERS. Agriculture Information Bulletin No. 750. Individual chapters in this book provide different perspectives on the nutrition problem in the United States, including: what are the economic costs associated with unhealthy eating patterns; how do dietary patterns compare with dietary recommendations; and how do national income and prices, advertising, health claims, and trends in eating away from home affect nutrient intake. May 1999. Stock # ERS-AIB-750. $60.00.

Away-From-Home Foods Increasingly Important to Quality of American Diet by Biing-Hwan Lin and Elizabeth Frazão, ERS, and Joanne Guthrie, Food and Drug Administration, U.S. Department of Health and Human Services. Agriculture Information Bulletin No. 749. The increasing popularity of dining out over the past two decades has raised the proportion of nutrients obtained away from home. Since the trend of eating out frequently is expected to continue, strategies to improve the American diet must address consumers' food choices when eating out. January 1999. Stock # ERS-AIB-749. $14.00.



Factors Affecting Nutrient Intake of the Elderly by Jon P. Weimer, ERS. Agricultural Economic Report No. 769. The rapid expansion of the population age 60 and older has a number of economic implications. The people in this group, about 18 percent of the population, account for about 30 percent of all health care expenditures. This exploratory investigation provides estimates of the effects of selected characteristics of the household and its constituents on individual nutrient consumption of elderly heads of households. October 1998. Stock # ERS-AER-769. $12.00.

Food Consumption, Prices, and Expenditures, 1970-97 by Judith Jones Putnam and Jane E. Allshouse, ERS. Statistical Bulletin No. 965. In 1997, each American consumed, on average, 81 pounds more of commercially grown vegetables than in 1970; 65 pounds more of grain products; 13 pounds more of total red meat, poultry, and fish (boneless, trimmed equivalent); 13 pounds more of added fats and oils; and 7 gallons less of milk. Americans spent $715 billion for food in 1997 and another $95 billion for alcoholic beverages. Away-from-home meals and snacks captured 45 percent of the U.S. food dollar in 1997, up from 39 percent in 1980 and 34 percent in 1970. April 1999. Stock # ERS-SB-965. $21.00.



Moving Toward the Food Guide Pyramid: Implications for U.S. Agriculture by C. Edwin Young and Linda Scott Kantor, ERS. Agricultural Economic Report No. 779. Recent studies show that average diets differ considerably from Food Guide Pyramid recommendations. The change in food consumption needed to meet Food Guide Pyramid serving recommendations will result in adjustments in U.S. agricultural production, trade, nonfood uses, and prices. The net adjustment in crop acreage is projected to be relatively small, about 2 percent of total cropland in 1991-95. However, this small net adjustment masks larger anticipated changes for some sectors. July 1999. Stock # ERS-AER-779. $14.00.

Food Marketing

Analyses of Generic Dairy Advertising, 1984-97 by Noel Blisard, Don Blayney, Ram Chandran, and Jane Allshouse, ERS. Technical Bulletin No. 1873. Generic advertising raised fluid milk sales about 6.0 percent, or 18.1 billion pounds, between September 1984 and September 1997. Sales of cheese rose by about 6.8 billion pounds (milk equivalent) in the same period because of increased generic advertising. Gross returns to dairy farmers between September 1984 and September 1997 were estimated to increase by $3.44 for each dollar spent on generic advertising. February 1999. Stock # ERS-TB-1873. $14.00.

Consumer Acceptance of Biotechnology: Lessons From the rbST Experience by Lorna Aldrich and Noel Blisard, ERS. Agriculture Information Bulletin No. 747-01. The controversial introduction of rbST, a laboratory version of bST, a growth hormone that stimulates milk production in cows, may provide hopeful lessons for other foods produced by biotechnology. Milk sales remained steady after rbST became available to dairy farmers, even though a multitude of public opinion surveys documented widespread concern about food safety and biotechnology, and some analysts predicted a drop in milk consumption of up to 20 percent. December 1998. Stock # ERS-AIB-747-01. $10.00.

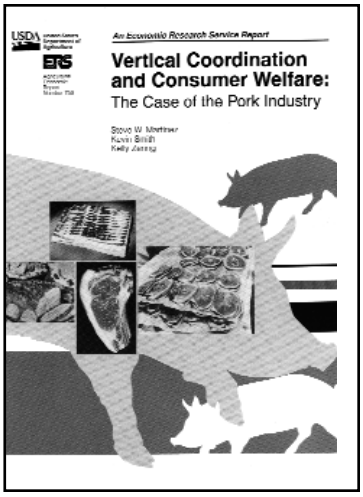
Consumer Use of Information: Implications for Food Policy by Lorna Aldrich, ERS. Agricultural Handbook No. 715. Government programs that are designed to improve health by changing diets focus on information: education, public information campaigns, and regulation of advertising and labeling. Research from several social science disciplines offers insights for public dissemination and regulation of nutrition information. A review of selected literature in economics, nutrition education, and marketing highlights several research themes. July 1999. Stock # ERS-AH-715. $14.00.

Food Cost Review, 1950-97 by Howard Elitzak, ERS. Agricultural Economic Report No. 780. Food prices, as measured by the Consumer Price Index (CPI), increased 2.6 percent in 1997. This increase was greater than the overall increase in the CPI (which rose 2.3 percent) for the third consecutive year. Higher charges for processing and distributing food, as measured by the farm-to-retail price spread, were primarily responsible for the 1997 increase. July 1999. Stock # ERS-AER-780. $16.00.

The Food Marketing System in 1996 by Anthony E. Gallo, ERS. Agriculture Information Bulletin No. 743. New food product introductions fell sharply in 1996. The number of new plants, consumer advertising expenditures, and common stock prices reached new highs in 1996, as did the number of mergers in the foodservice industry. This report analyzes and assesses yearly developments in the growth, conduct, performance, and structure of food marketing institutions, food processors, wholesalers, retailers, and foodservice firms. July 1998. Stock # ERS-AIB-743. $12.00.

The Impact of Minimum Wage Increases on Food and Kindred Products Prices: An Analysis of Price Pass-Through by Chinkook Lee and Brian O'Roark, ERS. Technical Bulletin No. 1877. An input-output model is used to analyze price pass-through effects of a minimum wage increase on prices of the food and kindred products and food-service industries. These sectors employ a disproportionate share of minimum wage workers, but results suggest a $0.50 increase in the present minimum wage would increase food prices less than 1 percent for most of the 12 food and kindred products prices and 1 percent at eating and drinking places. August 1999. Stock # ERS-TB-1877. $14.00.

Vertical Coordination in the Pork and Broiler Industries: Implications for Pork and Chicken Products by Steve W. Martinez, ERS. Agricultural Economic Report No. 777. Recent changes in structure of the U.S. pork industry reflect, in many ways, past changes



in the broiler industry. Production contracts and vertical integration in the broiler industry facilitated rapid adoption of new technology, improved quality control, assured market outlets for broilers, and provided a steady flow of broilers for processing. These arrangements might be expected to result in larger supplies of higher quality pork products at economical prices. April 1999. Stock # ERS-AER-777. $14.00.

Food Market Indicators website at http://www.econ.ag.gov/briefing/FoodMark/

Food Assistance

The Changing Food Assistance Landscape: The Food Stamp Program in a Post-Welfare Reform Environment by Craig Gundersen, Michael LeBlanc, and Betsey Kuhn, ERS. Agricultural Economic Report No. 773. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) dramatically transformed and continues to transform the food assistance landscape in the United States. The Act cut more funds from the Food Stamp Program than it did from any other program, through reductions in benefits per person and restrictions in eligibility. Despite these cuts, the Food Stamp Program is one of the only remaining entitlement programs available to almost all low-income households. March 1999. Stock # ERS-AER-773. $14.00.

Food Cost Indexes for Low-Income Households and the General Population by Noel Blisard, David Smallwood, and Steve Lutz, ERS. Technical Bulletin No. 1872. The results of this study indicate that the Consumer Price Index (CPI) has not systematically overestimated or underestimated the food costs incurred by the general population. "True-cost-of-food" indexes calculated for the general population tend to be the same as or slightly lower then the CPI except for 1994 and 1995. This is a significant finding in that components of the CPI for food at home are indirectly used to adjust benefit levels for food stamp recipients. February 1999. Stock # ERS-TB-1872. $14.00.

Prevalence of Food Insecurity and Hunger, by State, 1996-98 by Mark Nord and Kyle Jemison, ERS, and Gary Bickel, Food and Nutrition Service, USDA. Food Assistance and Nutrition Research Report No. 2. Although most households in the United States are food secure, during the period 1996-98 some 10 million U.S. households (9.7 percent of total) were food insecure—that is, they did not always have access to enough food to meet basic needs. Included among these were 3.5 percent of households in which food insecurity was severe enough that one or more household members were hungry at least some time during the year due to inadequate resources for food. October 1999. Stock # ERS-FANRR-2. $12.00.

Food Assistance and Nutrition Research website at http://www.econ.ag.gov/briefing/foodasst/

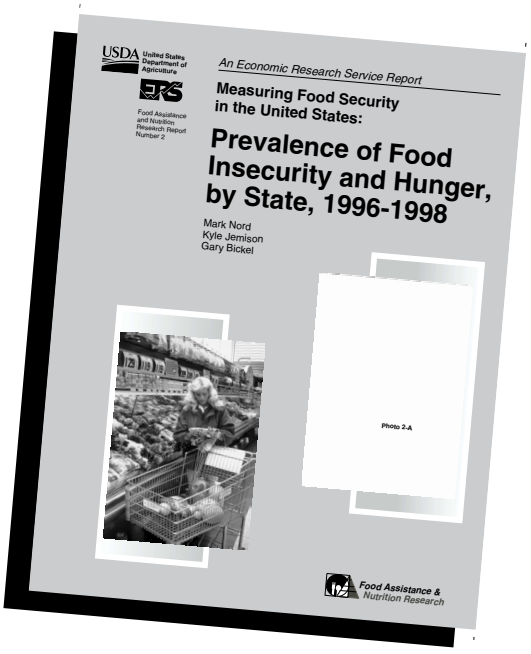
International Marketing Trends

Food Security Assessment: Why Countries Are At Risk by Shahla Shapouri and Stacey Rosen, ERS. Agriculture Information Bulletin No. 754. Food insecurity in many low-income, developing countries is projected to intensify unless steps are taken to reverse the performance trend of agricultural productivity, foreign exchange earnings, and population growth. This study evaluates availability and distribution of food and analyzes their trends through 2008 by projecting food gaps to maintain per capita consumption, meet nutritional needs, and fulfill requirements stemming from unequal food distribution. August 1999. Stock # ERS-AIB-754. $14.00.

U.S. Foreign Direct Investment in the Western Hemisphere Processed Food Industry by Christine Bolling, Steve Neff, and Charles Handy, ERS. Agricultural Economic Report No. 760. Foreign direct investment (FDI) has become the leading means for U.S. processed food companies to participate in international markets. Affiliates of U.S.-owned food processing companies had $30 billion in sales throughout the Western Hemisphere in 1995, nearly 4 times the level of processed food exports. This report puts U.S. foreign direct investment and trade in processed foods to the region into global perspective, and finds evidence that, in the aggregate for the 1990's, trade and FDI are complementary—not competitive—means of accessing international food markets. March 1998. Stock # ERS-AER-760. $16.00. ■

New Report from the Economic Research Service

Prevalence of Food Insecurity and Hunger, by State, 1996-98



Food insecurity:

Limited or uncertain availability of nutritious, safe foods.

Hunger:

A more severe level of food insecurity; an uneasy or painful sensation caused by lack of food due to inadequate resources.

Food insecurity across States ranges from 4 to 15 percent

For the first time, State-by-State estimates reveal that

- 11 States have levels of food insecurity above the U.S. average
- The incidence of hunger is above the U.S. average in 6 States

Call 1-800-999-6779 from 8:30 a.m.-5 p.m. ET to order a copy of this report. Ask for Stock # ERS-FANRR-2.

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